



THE
ST LAWRENCE WATERWAYS
AND POWER PROJECT

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A few facts compiled at the request of the members of The Shipping Federation of Canada (Incorporated) in opposition to the project.

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P R E F A C E .

To MR. R. W. REFORD,

*President, The Shipping Federation of Canada,
Montreal.*

Now that the enthusiasm worked up throughout the country by the advocates of the Great Lakes—St. Lawrence waterway and power project has subsided, the present time may be opportune to place before the Canadian public the true facts, from a Canadian viewpoint, of the impracticability, both economically as well as commercially, of such a scheme.

The object of this booklet is to place before the Canadian public the arguments used from time to time by the various important public bodies, and I feel sure I am not transgressing when I say that the Canadian Government could in no better way merit the confidence of the Canadian people than by standing firm in the position they have already adopted and refuse to be drawn into such a scheme, which is fraught with serious complications which may be detrimental to the future welfare of our Dominion.

This booklet is prepared from press and official documents at the request of your good self and the members of The Shipping Federation of Canada with a view of giving the true Canadian viewpoint, which I feel sure is in the interest of the whole of Canada.

THOMAS ROBB (F.C.I.S.),
Manager and Secretary.

Montreal, July 4, 1923.

ST. LAWRENCE RIVER NAVIGATION AND POWER PROJECT

The Government of Canada is being urged to enter into a treaty with the United States committing both countries to joint action in constructing works on the St. Lawrence River for the combined development of water power and improvement of navigation.

It has been seriously proposed by the United States Government that such a treaty should be concluded on the basis of recommendations made by the International Joint Waterways Commission before any plan of operation has been adopted, and without definite knowledge either of the difficulties to be encountered, the expenditures and obligations to be incurred, or the benefits to be derived from the undertaking.

The following pages are devoted to a brief statement of a few of the many reasons for the belief that such a commitment would not only be premature and not in the best interest of the country at large, but that it would involve unnecessary and unwarranted sacrifice of national rights and assets as well as huge expenditures which Canada can ill afford at the present time, on works the immediate necessity for which is not apparent, and the benefits of which are largely problematical.

The proposals involve—

- Expenditure of enormous sums of money
- Engineering problems of the most serious character
- Scraping of the present St. Lawrence Canal System
- Sacrifice of independent national control of water transportation from the Great Lakes to the sea
- Difficulties inseparable from international ownership and control.

Before the Government can be justified in committing the country to the project in any way there should at least be definite determination of the following points:

1. What will it cost Canada?
2. Are basic conditions in every way favorable to the undertaking?
3. Has sufficient knowledge been gained with regard to the engineering features?
4. What benefits will accrue to Canada as a result of the proposed works?

5. Would they be such as to warrant the expenditures and sacrifices involved?

6. Cannot equally beneficial results be obtained by some alternative means at less cost and without sacrifice of national rights and advantages?

Does the Report of the International Joint Commission answer these questions satisfactorily?

1. What will it cost Canada?

Common sense dictates that this should be known within reasonable limits prior to commitment to the project.

Past experience with national undertakings strongly confirms this dictation.

Our financial position renders it imperative.

The Commission recommend a scheme of development and present an estimate by their engineers that it will cost \$252,000,000.

It must be noted, however, that

(a) This estimate covers only part of the works required, viz. the section between Lake Ontario and Montreal.

To complete the proposed waterway and render this initial expenditure effective, inter-lake channels including the St. Marys River, the St. Clair River, Lake St. Clair, and the Detroit River must be deepened, new locks built at the Sault, lake harbours deepened and harbour and terminal facilities provided.

Regulating works on the upper lakes will also probably be necessary for the maintenance of levels.

The entire cost of the Welland Canal, which is likely to closely approach \$100,000,000, is additional to the above figures.

The investigation made by the Commission was strictly confined to the St. Lawrence River section and thus affords no guidance as to the cost of the complete waterway, which has been estimated by prominent engineers at \$500,000,000 to \$700,000,000, or even higher.

(b) Even as to the cost of the St. Lawrence River section, the amount which Canada will have to pay as her share is not even remotely indicated. The Commission recommend that apportionment of cost of navigation works shall be revised every five years and shall be "based upon the freight tonnage of each country actually using the waterway for the preceding five-year period."

Under this recommendation if a rival deep waterway to the Hudson were constructed, as already strongly urged in the United States and recommended by a Deep Waterways Commission appointed by the U.S. Federal Government, Canada might eventually be saddled with 90 per cent of the cost of the waterway, if not more. If on the other hand, in default of this, United States traffic should greatly predominate on the route, Canada would have less to pay, and the St. Lawrence would become simply an American owned waterway for the accommodation of American trade in Canadian national waters.

(c) The Commission wind up by recommending that before the scheme on which the estimate is based shall be acted upon, the whole matter shall be referred to a special technical board of engineers for further study and consideration.

In so far as answering the question at the commencement of this paragraph is concerned, therefore, the report of the Commission leaves us wholly in the dark.

2. Are basic conditions in every way favorable to the undertaking?

One very serious condition exists which materially affects the entire project, and without the clearing up of which no plans for development of waterpower or navigation on the St. Lawrence can be secure or final. Until the question of diversion of water to be permitted from the Great Lakes is definitely and finally settled, any and every improvement made is subject to material damage and deterioration from lowered water levels.

The Commission have no solution to offer. Their report states:

"At the Montreal hearing the attention of the Commission was drawn, both by the chairman of the Montreal Harbour Commission and the president of the Shipping Federation of Canada, to the fact that through the diversion of water from Lake Michigan by the Chicago Drainage Canal the water levels in the St. Lawrence suffer, not only in that portion of the river which it is now proposed to improve, but also in the harbour of Montreal and in the dredged ship channel below Montreal."

"This Commission does not feel called upon to express any opinion as to the propriety or otherwise of the Chicago diversion, beyond observing that the engineering services of both countries have reported that the present diversion has had a certain definite effect in lowering the prevailing depths in all the lakes and connecting rivers below Superior, including the St. Lawrence, and particularly in the harbours and river channels, which had been repeatedly deepened at very great expense to meet the increasing demands of commerce."

3. Has sufficient knowledge been gained with regard to engineering features of the project?

The Commission say that the time allowed for investigation—

"was entirely inadequate to the requirements of an engineering problem of such exceptional character and magnitude."

and that—

"It was obviously impossible to deal with such a large and complicated engineering problem in 12 months."

and conclude that—

"It is desirable that, before any steps are taken to carry out the Commission's recommendations, the plans of the engineering board, together with such comments and criticisms or alternative plans as have been filed with the Commission by other engineers, should be referred back to the board, enlarged by other leading members of the engineering profession, to the end that the whole question be given that further and complete study that its magnitude and importance demand."

All of which clearly indicates that in the opinion of the Commission the question must be answered in the negative.

Further, the Commission say that—

"The ice question in connection with such a river as the St. Lawrence with its immense volume, varying currents and severe winter conditions, presents one of the most difficult problems confronting engineers in designing works for its improvement."

"The solution of this problem is *so vital to the success of the proposed improvement*, that the Commission is strongly of the opinion that it should be gone into very thoroughly by the larger board elsewhere recommended."

And with regard to land damages they say—

"An important result of the proposed improvement, if carried out, will be the extent of damage resulting from flowage due to the higher levels maintained in the St. Lawrence."

"The Commission is of the opinion that there should be an exhaustive investigation of the extent and character of the damage *as soon as the plan of development has been finally accepted.*"

It may be further pointed out that no complete general survey of the St. Lawrence has ever been made. Previous development was by means of side canals, and the only surveys required were such as affected these works. Owing to the limited time given for submitting their report, the engineers were forced to adopt a development scheme, lay it down on existing maps, and confine their borings and detailed investigations to points thus selected for location of structures. Consequently while a plan of improvement was suggested there can be no guarantee that it is the best plan.

In this connection a couple of suggestions readily present themselves.

1. The proposed plan calls for maximum water power development by a high dam at the Long Sault.

A two-stage development, as proposed by some engineers, might be the means of averting serious injury to a number of towns and villages by flooding and be otherwise more advantageous to Canadian interests.

2. The destruction of the Cornwall Canals might be avoided, and the 14 foot waterway left intact.

3. Under the proposed plans only one lock is to be located in American waters.

Is there any valid reason why the whole navigation system, including the Welland Canal, should be internationalized, and Canada's present control of her own transportation via the St. Lawrence sacrificed?

4. *What benefits will accrue to Canada as a result of the proposed scheme?*

To this question the report affords no answer.

A certain area in the United States and Canada is assumed to be tributary to the waterway.

The gross annual production of various articles in this area has been calculated and is set forth in the report.

No evidence is given to connect this production with the St. Lawrence waterway, and the figures cited are therefore in many cases not only irrelevant, but even extremely misleading.

Question VIII submitted by the Governments was—

“To what extent will the improvement develop the resources ‘commerce and industry of each country?’”

to which the Commission's answer is—

“The Commission has brought together a very considerable volume of data relating to the resources, commerce and industry of the area that it is believed would be economically tributary to the proposed deep waterway, and has based certain conclusions upon that data, which are embodied in this report. It is impossible to state in more specific terms the extent to which the improvement would develop the resources, commerce and industry of each country.”

Mere statistical information as to population, production and resources, however, unless in some way brought into direct relation with the project, is of no value in determining the economic or commercial results of the particular scheme proposed.

One point the Commission is clear upon, viz., that the United States is to be the chief gainer.

"The benefits to be derived from the opening of a water-route to the sea will accrue in larger measure to American than to Canadian interests, though it is reasonable to assume that eventually the advantages may be more evenly distributed."

"It finds that the existing means of transportation between the tributary area in the United States and the seaboard are altogether inadequate, that the railways have not kept pace with the needs of the country, but that this does not apply to the Canadian side of the area, where railway development is still in advance of population and production."

"The situation is complicated not merely by the fact that two neighbouring countries are joining in the project, but that these countries are unequal in population, unequal in wealth, and unequal in their ability to make use of the waterway."

Would they be such as to warrant the expenditures and sacrifices involved?

So far as any possible benefits to be derived by Canada are concerned the report leaves them undefined and purely a matter of speculation and conjecture.

The only certainty about the expenditures to be made by Canada is that they will be very large. Any attempt to estimate them on the basis of the recommendations of the report to within say \$100,000,000 of the correct ultimate figures would be mere guesswork.

The sacrifices to be made alone are definite.

A substantial and valuable asset of the Dominion, the present St. Lawrence canal system, built at a cost of many millions of dollars is to be wiped out without compensation in any form.

The St. Lawrence route, although almost entirely in Canadian territory, is to be internationalized, and to that extent Canada is to sacrifice commercial independence and national control of transportation of her own products in her own waters.

6. Can equally beneficial results be obtained by some alternative means at less cost and without sacrifice of national rights and advantages?

Though the terms of the reference limited the investigation to the answering of certain specific questions with regard to the St. Lawrence, the Commission pronounce a very definite opinion on this point, though it does not appear on what evidence such opinion was based.

The Commission's conclusion is—

“It finds that of the various alternative routes mentioned from the interior to the seaboard none offers advantages comparable with those of the natural route by way of the St. Lawrence.”

Despite this dictum of the Commission, based largely on *ex parte* evidence, there are several alternatives to the proposed scheme which, from a Canadian point of view, deserve careful consideration before Canada is irrevocably committed to international ownership of works and control of navigation on the St. Lawrence.

1. We have now a 14 foot transportation route on the St. Lawrence, which has fully met all needs up to the present time. When the necessity arises, and we are in a financial position to undertake it, why not, in pursuance of the well established development policy followed heretofore, make any required improvements as a national undertaking and retain our present national control of St. Lawrence navigation? Such a policy need in no way interferes with joint development of international water-powers on the St. Lawrence as demand for same may arise.

2. Canada has an independent national water route from the Great Lakes entirely within her own territory and capable of improvement to accommodate the largest vessels likely to be employed on the Lakes. Had a waterway of the character of the Ottawa and French River route existed on the United States side of the boundary, there can be no doubt that it would have been developed years ago. Complete surveys have been made, it is perfectly feasible from an engineering point of view, is about three hundred miles shorter than the St. Lawrence route, and has other advantages both physical and economic. Moreover, its location is such that while its development would not interfere with full enjoyment of the use of the St. Lawrence system, it would open up new territory, and be of enormous advantage in developing the natural resources of Northern Ontario and Quebec.

So far as waterpower is concerned, its improvement would result in the development of 1,000,000 HP along the route itself, and render practicable further development of as much more on tributary streams. And the required improvement could be effected at less than half the cost of the contemplated St. Lawrence project.

3. Northwest grain forms the bulk of the present traffic in Canadian products on the St. Lawrence canals. And, so

far as Canada is concerned, it would be the chief source of traffic for the deeper waterway proposed.

The possible influence on this traffic of the opening up of new avenues of transportation of grain from the Northwest via Vancouver and Hudson Bay has yet to be determined.

We have very large sums invested in railways. The Commission finds that we have more railways than we need. Many Canadians believe that we are still far from having reached the best results to be obtained from them in solution of our transportation problems.

Before, therefore, Canada is committed to internationalization of the St. Lawrence, all possible alternatives should be thoroughly studied and investigation should be broad enough in scope to include both the Georgian Bay Canal and the possibilities and relation to our transportation needs of Canadian Railways.

DIVERSION OF WATER AT CHICAGO

No plans for either power development or improved navigation of the St. Lawrence can be intelligently prepared until the question of diversion of water from the Great Lakes is definitely settled. The seriousness of the matter can be realized from the fact that the Sanitary Canal at Chicago has been constructed to carry an amount of water equal to double the low water flow of the Ottawa River at Ottawa.

In 1913 proposals were made for certain changes in the Livingstone Channel. The expenditure involved was not large and was to be made wholly by the United States.

The Canadian Government opposed the plan on the following ground:—

"It would appear undesirable at the present time for either Government to commit itself to a policy of compensatory works at individual points in the interested waters, until some definite conclusion is reached as to the extent to which diversions from Lake Michigan are to take place."

"Once this question is finally settled, then both countries can enter upon a sound and reasonable joint system of improving this great waterway to the enormous advantage of both." Memo submitted on behalf of the Canadian Government.

Counsel for the Government in his argument said:—

"I submit on behalf of the Dominion Government that we consider it of vital importance that if any expenditure by either country is to be undertaken, the question of the amount of diversion at Chicago should be settled."

W. J. Stewart, Engineer for the Canadian Government, also said:—

"There is no guarantee as to the amount of the diversion through the Sanitary Canal, and it is therefore impossible for any body of engineers to construct any work to give the maximum benefit—for instance, a work is designed and constructed upon a definite plan or to a definite datum. As soon as it is completed some community comes along and diverts a large quantity of the water, reducing the levels and destroying its efficiency."

The arguments advanced in that case are of immensely greater importance in the matter of proposals involving expenditures of several hundred million dollars, and the sacrifice by Canada of an independent national waterway from the lakes to the seaboard.

It was clearly proven a few years ago that the Chicago Drainage Canal diversion had resulted in lowering of water levels on the St. Lawrence.

The present diversion is unauthorized. An application to increase its amount to 10,000 cu. ft. per sec. was refused by U.S. Secretary of War Stanton, who in his decision said:—

"The Sanitary Canal has never received the direct sanction of Congress. It was built solely under the authority of the State of Illinois. Very careful consideration.....leaves no doubt in my mind that the withdrawal of 10,000 cu.ft. per sec. would substantially interfere with the navigable capacity of the Great Lakes and their connecting links.....the Welland Canal and a number of canals on the St. Lawrence River."

"The available depth of water over one or all sills of each of these canals would be affected and in some cases reconstruction might be made necessary."

On this application, Counsel for the Canadian Government, Daniel Mullin, K.C. stated that such diversion would lower levels in Montreal Harbour by $10\frac{1}{4}$ inches. Reports later made by Mr. Arthur Surveyer, C.E., Mr. Walter J. Francis, C.E., and the late Professor C. H. McLeod of McGill University, on the actual loss under then existing conditions showed this to have reached from 9 to 9.5 inches for 8,000 cu. ft. per sec.

Gen. Bixby, Chief of Engineers of U.S. Army, reported in connection with the above application that:—

"For purposes of navigation alone—a diversion from Lake Michigan *of less than 1000 second feet* of water is all that will be actually necessary, and any greater diversion is a greater injury than benefit to navigation."

He also points out that although granted permit for 4,000 feet per second they were constructing works to divert 14,000 cu. ft. per second, and says:—

"Every cubic foot per second of water flow taken out of Lake Michigan in excess of its natural outflow through Lake Huron and the St. Clair River tends to injure navigation over the entire waterway from Lake Michigan to the Gulf of St. Lawrence."

"Moreover, the same loss of water will permanently injure and diminish the water power development capacity of the Niagara and St. Lawrence Rivers."

The International Waterways Commission in 1907 stated:—

"The diversion of 10,000 cu.ft. per sec. will lower the levels of Lake Michigan, Huron, Lake St. Clair, Lake Erie, Lake Ontario and the St. Lawrence River, besides the important connecting channels, the Detroit and St. Clair Rivers, by amounts varying from $4\frac{1}{4}$ to $6\frac{1}{4}$ ins. for the different waters, and the diversion of 14,000 cu.ft. will lower them from 6 to $8\frac{1}{2}$ inches. The diversion of 20,000 c.ft. will lower Lake Michigan-Huron about 13 inches and Lake Erie about 11 inches.

These figures are all for mean water levels. At low water when the need is greatest, the loss of draft would also be greatest.

Notwithstanding refusal of authority it is understood that the diversion was increased to 14,000 cub. ft. per sec.

The Report of the Commission of Conservation for 1919 shows that diversions are still being made:—

"Any national boundary water policy of Canada involving the St. Lawrence River is of vital relationship to every citizen of the Dominion. Such rights as were conferred in the case of the St. Lawrence River Power Co's application are, when once granted, difficult to control. An excellent illustration is found in the illegal diversion of water from the Great Lakes system through the canal of the Sanitary District of Chicago. During the past year the Calumet-Sag portion of that canal system, providing for a still further diversion of water, was completed. The Sanitary District's works take water in excess of its permit, and it has not been prevented from doing so."

ARTHUR V. WHITE (Tenth Annual Report Commission of Conservation, 1919.)

The most serious phase of the situation is that no limit has yet been set, and apparently the State of Illinois is to be the sole arbiter in the matter of her own requirements. Some indication of the attitude taken may be had from statements made by officials of the Sanitary District and others.

"The presumption that our water supply is to be limited to 10,000 cu.ft. per sec. is gratuitous and mischievous, and should not be voiced by the officials of this district. I believe that we should have the volume requisite to our needs as they appear and are justified."

(President of Sanitary District.)

"We will not submit to any treaty which limits us as it is proposed to do (10,000 cu.ft. per sec.). We have back of us the whole State of Illinois. I speak for the State. We have in sympathy with us all the States of the Middle West, and they carry influence in the national councils which, I believe, will defeat any treaty which tends to limit us in what we believe are our rights."

(Chief Engineer Sanitary District.)

"If the time ever does come when this district by reason of its diversion of waters is going to affect the commercial interests of the Great Lakes, you can leave it with the American Government and the people who are interested in the commerce on this side to see that we are stopped. You can leave it to them to put a stop to it without asking the aid or assistance of a foreign country."

Attorney for Sanitary District.

Commenting on the above statement of the President of the Sanitary District, the U.S. Secretary of War said:—

"It is therefore quite conceivable that compliance with their sanitary needs according to their method of sanitation may eventually materially change this great natural watercourse now existing through the lakes."

But it is not only sanitary requirements that are had in view. A statement made by Isham Randolph, representative for the State of Illinois, on the application for permit to divert 10,000 cubic feet of water per second from Lake Michigan, reads in part,—

"As long as water runs down hill or floats a boat, Illinois wants this water. She wants it for the health and life of her people; she wants it for her own water-borne commerce and for that of her sister states; she wants it for the power that it will yield; she wants it now, henceforth and forever."

A recent publication with regard to the Illinois and Michigan Canal says:—

"The plan for the waterway includes the construction of four state-owned power plants with an aggregate capacity of 140,000 H.P. It is estimated that this amount of electrical power would carry the interest charges on the cost of construction, pay the cost of operation and maintenance, and provide a sinking fund with which to finally extinguish the entire debt."

A statement was also made by a former Chief Engineer of the Sanitary District as follows:—

"It is estimated that the flow of water that will eventually come from Lake Michigan through the Drainage Canal, together with the natural flow of the river, will produce 173,000 H.P., and with the revenue therefrom the State of Illinois proposes eventually to recoup itself for its expenditures and contribution to the deep waterway."

It has been estimated that the volume of water necessary to produce one horse-power on the Drainage Canal, would produce 4 H.P. on the Niagara and St. Lawrence Rivers.

Considered therefore from the point of view of power production alone, the proposals involve a reduction in the available power of the Niagara and St. Lawrence by nearly 700,000 H.P.

The importance of the matter as regards water levels for navigation is extreme.

The Canadian Sault Lock was designed to have 22 feet of water on the sills. There are records of up-bound traffic being limited to 17 feet draft, while by "flooding" vessels out of the lock, they were able to come down with 18 ft. 2 ins. to 18 ft. 4 ins. draught.

Similarly the St. Lawrence Canals were designed to have 14 feet of water on the sills. There have been periods when only 12 feet 6 inches to 12 feet 8 inches were available, and vessels were sent to the elevators at Prescott to discharge part of their cargo before attempting to run the canals.

It is not going too far to say, therefore, that no intelligent or satisfactory plan for the ultimate development of the St. Lawrence Waterway can be made until this question of diversion is definitely and finally settled.

Counsel for the Canadian Government on the application for diversion above mentioned, summed up the matter as follows:—

"Canada contemplates vast expenditures in the near future on her Welland, St. Lawrence and Ottawa River Canals, to enable her to take better advantage of her great inheritance, and it would be both criminal and suicidal to throw away what Nature has thus provided."

"This question of diversion is a dangerous one to play with; it will not do with this application. Chicago will not be satisfied now, and there is little reason why the next request should not come from some community to divert directly from boundary waters with as great injury to navigation as this will be. If one community is granted such great privileges it will be most difficult to refuse the others."

Clearly a report which ignores a matter of so radical importance affecting the proposed works, cannot be regarded as suitable to become the basis of an international treaty.

LACK OF ENGINEERING DATA

The short time allowed the engineers put out of the question any thorough study of the serious problems involved. Their work had to be rushed through, and some sort of plan submitted within the time limit. The Commission say the time "was entirely inadequate to the requirements of an engineering problem of such exceptional character and magnitude." Further:—

"The instructions to the engineering board made it clear that they were not expected to submit anything more than outline plans and lump-sum estimates, the period of twelve months allowed them for the work being considered insufficient for the preparation of detailed plans and estimates. *While it was obviously impossible to deal with such a large and complicated engineering problem in 12 months,* the engineering board has unquestionably, both in the matter of plans and estimates, given the Commission more detailed information than the strict letter of the instructions called for, and has put it in a form that leaves little to be desired."

But the Commission candidly admits the imperfection of the plans submitted by the recommendation:—

"It is desirable that, before any steps are taken to carry out the Commission's recommendations, the plans of the engineering board, together with such comments and criticisms or alternative plans as have been filed with the Commission by other engineers, should be referred back to the board, enlarged by other leading members of the engineering profession, to the end that the whole question be given that further and complete study that its magnitude and importance demand."

The plans of the engineers thus stand discredited *in toto* by the Commission itself, as a basis for actual operations.

The final conclusion of the Commission with regard to the engineering features of the project presents a point that is of special interest to Canadians. They say:—

"Finally, the Commission is strongly of the opinion that the subject matter of this investigation is one of such extraordinary importance to the people of the two countries, and involves engineering problems of such magnitude and diversity, that no effort should be spared to secure a plan which will beyond all reasonable doubt obtain from the Upper St. Lawrence its maximum efficiency in navigation and power."

This at once directs attention to the remarkable difference in treatment of the Canadian national section and of the international section of the river under the plans approved.

On the Canadian section, side canals are proposed to be constructed and the river left in its natural state, no water-powers being developed.

On the international section of the river, it is proposed to erect a high dam near Cornwall to obtain the maximum possible development of power from the Long Sault Rapids, and a second smaller dam at Ogden's Island to raise the water to the level of Lake Ontario.

This gives color to the claim that has been repeatedly made, that the primary and paramount aim of the proposed undertaking is to secure the greatest possible water-power development at the Long Sault, regardless of other features of the project.

In connection with the proposed erection of high dams at the Long Sault to obtain the maximum development at that point, the plans have been seriously criticized and there can be no doubt that the erection of such huge dams to control a river of the magnitude of the St. Lawrence presents grave engineering difficulties.

Hugh L. Cooper of New York, builder and designer of the great dam at Keokuk on the Mississippi, recognized as one of the leading hydraulic engineers of the United States, says on this point:—

"No great dam has hitherto been built anywhere except in locations offering seasons of low flow for the installation of the necessary temporary works. 40,000 cu. feet of water per second has hitherto been considered an excessive amount of water to handle at the time cofferdams were being placed. On the St. Lawrence cofferdams will have to be placed when four and one-half times as much water is being discharged as has hitherto been successfully controlled. The depth to foundations on the St. Lawrence is more than 65 feet for an average of 15,000 feet of masonry work. The length of time required for the work will be at least five years, thus necessitating that temporary construction, including the cofferdams, must, as a matter of fact, have the stability of permanent structures in order to sustain the labor of five unknown seasons in a great river"....."calls for the unwatering of an under-water area six times as large as any work of this class hitherto accomplished."

"It should be perfectly obvious that such an undertaking can never be accomplished except through a unity of direction that will have to be lodged in one organization controlled by men whose previous achievements will justify the work being undertaken at all."

Ice conditions on the St. Lawrence in winter have always presented a grave problem, and the effectiveness of the plans submitted by the engineers to cope with this problem is open to serious question. Mr. Hugh L. Cooper, already quoted, who has had experience in dealing with ice conditions on Niagara River and elsewhere, pronounces the proposed plan decidedly defective.

The difficulties presented by this problem are recognized by the Commission, who say in their report:

"The ice question in connection with such a river as the St. Lawrence, with its immense volume, varying currents, and severe winter conditions, presents one of the most difficult problems confronting engineers in designing works for its improvements. With the river in its natural condition ice-jams have occurred in the past that caused immense damage, and with the introduction of artificial works, unless these are very carefully located and designed, the opportunities for ice trouble are accentuated."

and they indicate the insufficiency of their data on this point by their statement:—

"The solution of this problem is so vital to the success of the proposed improvement, that the Commission is strongly of the opinion that it should be gone into very thoroughly by the larger board elsewhere recommended."

No complete and thorough survey of the St. Lawrence River has ever been made. Previous development was by side canals, and the only surveys required were such as affected those works.

Hugh L. Cooper of New York, who designed the great Keokuk dam on the Mississippi and who made an independent report on the St. Lawrence development, gave as his opinion of the plans approved by the Commission that they are

"pregnant from beginning to end with fundamental engineering conclusions and recommendations radically opposed to the public interest of more than fifty million people."

"In Cooper's opinion these conclusions and recommendations failed to produce the best navigation and power results, and the Government Engineers' plans could not be corrected by amendment or minor changes because they were fundamentally wrong," (*The Outlook*, Jan. 31, 1923.)

METHODS OF INVESTIGATION.

A preliminary meeting of the Commission was held at Buffalo on March 1, 1920, at which there were in evidence two booster organizations, viz., the Great Lakes-Tidewater Association and the Canadian Deep Waterway and Power Association.

The Tidewater Association, organized largely through the efforts of Chas. P. Craig, of Duluth, comprised at first fifteen, and later on eighteen States of the Middle West, the Governors of which became ex-officio members of a directive Council. Money for active and extensive propaganda was plentiful. Speaking at Windsor, Ont., Mr. Craig, Executive Director of the Association, is reported to have said:—

“The money that is financing our organization is appropriated by the States. This money is appropriated by only a few as they cannot spread it around. There would be too much money.”

The Canadian Deep Waterways and Power Association has its headquarters in Toronto. Active support of this organization was apparently confined to a few places mostly along the Great Lakes.

From start to finish of the investigation, these two bodies were active in presenting evidence to influence the Commission in favor of the project.

A large amount of testimony was heard at the public meetings but has never been made public. The only information generally available is that contained in the report of the Commission which was published in the United States as Senate Document 114, 67th Congress, 2nd Session. It is understood that a limited number of copies of this report were sent to Ottawa for distribution in Canada.

It is a striking fact, shown by internal evidence, that the report of the Commission, as regards the economic aspects of the undertaking, was largely based on, and it might even be said written around, a partisan statement prepared for the Great Lakes Tidewater Association as part of their propaganda, being a brief by Messrs MacElwee and Ritter.

Part IV of the report deals with “The Transportation Problem.” It opens with a statement that the MacElwee-Ritter brief is so important, that it is to be put before the governments in its entirety. The subject is then outlined along the lines of the MacElwee-Ritter brief, and 23 conclusions “reached by MacElwee and Ritter as the results of

their studies of the economic aspects of the proposed water-way" are set forth "as a matter of information and not necessarily as the conclusions of the Commission."

The report proceeds:—

"The Commission's principal interest is in the data upon which Messrs MacElwee and Ritter base their conclusions, and these data are so important that it has seemed desirable to bring them, as far as possible, down to date, and to supplement them with additional data wherever that appeared necessary."

"It may also be pointed out, in explanation of the fact that in this part some features of the transportation problem are dealt with at considerable length, while others are not discussed at all, that the former represent statistical studies submitted in amplification of those of Messrs. MacElwee and Ritter, and that so far as points not discussed here or in the preceding part are concerned, the Commission have nothing to add to the data of Messrs. MacElwee and Ritter, which are accepted as reliable and as adequately covering the points in question."

Further evidence in support of the statement that the report on the economic side of the investigation is a mere amplification of the partisan brief prepared for the Great Lakes Tidewater Association, would be superfluous.

Additional light, however, is cast by a statement in the preceding section of the report, Analysis of Testimony:—

"An analysis of the facts and opinions obtained by the Commission at its various hearings, and otherwise, brought out a series of more or less well-defined arguments for and against the economic practicability of the proposed improvement of the St. Lawrence. These arguments will now be set forth and discussed as fully as their importance in each case seems to warrant."

In the resume which follows, the opinions of Messrs. MacElwee and Ritter are frequently cited as to ice and fog conditions on the St. Lawrence, naval architecture, navigation of the waterway by ocean-going vessels, etc., a considerable portion of this section being devoted to elucidation of their views.

Evidence of representatives of public bodies in Montreal is disposed of with the mere remark that "it was their view that, for the reasons stated, it was not economically practicable for ocean vessels to be employed on such inland waterways as the Great Lakes."

Two Royal Commissions appointed by the Canadian Government have reported on the economic aspects of deep water navigation between the Great Lakes and the Atlantic. One of them was apparently not thought worth mention. The other was disposed of with the statement that while the

reports have a bearing on the economic features of the present undertaking "as they are readily accessible, it is not considered necessary to do more than refer to them here."

And to throw discredit on adverse opinions offered, the statement is made:—

"Many citizens of Buffalo, Montreal, New York, Albany, Boston and Philadelphia were determined to oppose the project mainly because they believed that it would adversely affect the interests of Buffalo or Albany or the New York Barge Canal or of the great seaports of New York, Philadelphia, Montreal and Boston."

MISLEADING INFORMATION ON WHICH REPORT IS BASED

Numerous illustrations could be given of the unreliability of the data on which the report has been based, but one or two must suffice.

The Commission make the statement in their report that:—

"Of the five locks at Sault St. Marie, two on the United States side have a depth of nearly 25 feet, and the Canadian lock, a depth of 23 feet."

Official figures as to depths are contained in The Statistical Report of Lake Commerce through the Canals at Sault Ste. Marie. The report for 1919 at page 22 says:—

"The Canadian Canal $1\frac{1}{8}$ miles long, 150 feet wide and 23 feet deep, with lock 900 feet long and 60 feet wide, having 22 feet of water on the miter sills (*18.2 feet at present low water datum*) was built in" etc.

Not only do the Commission overstate the depth of the lock, but they ignore the fact in their report that its effective or operating depth at low water is nearly *five feet* less than that stated.

Failure to come up to the specifications of the original design, even in a much less degree, in the case of the proposed locks on the St. Lawrence, would be a very serious matter.

Several pages of the report are devoted to statements showing the enormous production of the Middle West States. The figures are imposing, but, in many instances, have very little real bearing on the subject of discussion. For example:—

"In 1919 the area tributary to the proposed waterway produced an aggregate of 3,344,151,093 bushels of cereals of all sorts valued at \$4,718,042,984."

Some marvellous so-called arguments in favor of the project have been based on such figures as these.

Julius H. Barnes, former Director of the Wheat Board of the United States, in an article in the Review of Reviews in August, 1922, says that, owing to an economic law:—

"a reduction of five cents per bushel in transportation expense between the Western farm and the European consumer would add that value to every bushel grown in the territory affected in a radius of the Great Lakes ports"— and, further that as there is "a grain production of almost 4,000,000,000 bushels of the five standard crops—the selling price of these standard grain crops alone would be increased by \$200,000,000 annually.

This bubble of the imagination, iridescent with hope to the farmer, collapses when brought in contact with cold fact.

The report of the United States Federal Trade Commission in 1921 says:—

“It is estimated that about 90 per cent of the corn crop is regularly consumed by hogs, cattle, horses, mules and other animals, and 80 per cent of it on the farm where grown.”

The corn crop of the United States for 1920 was 3,232,367,000 bushels, and the exports amounted to only 17,761,420 bushels, or about half of one per cent.

The Federal Trade Commission therefore naturally record the conclusion that:—

“In view of the size of the crop export demand is an inconsiderable factor in the corn market.”

As to oats, the Federal Trade Commission state that:—

“3 per cent of a crop of 1,250,000,000 bushels is used for human food, 7½ per cent for seed, and between 85 and 90 per cent by live stock.”

The crop for 1921 was 1,526,055,000 bushels. Exports for ten months ending April, 1921 were less than 4,000,000 bushels, or less than one-third of one per cent.

Taking these two crops alone, from a combined production of over 4,750,000,000 bushels, the export trade amounted to about 21,000,000 bushels. And since corn and oats constitute about four-fifths of the entire cereal crop, the misleading nature of mere general statements as to volume of production is very evident.

As already mentioned, the Commission appear to have been very greatly influenced by the MacElwee-Ritter brief.

At page 62 of the report it is stated that:—

“MacElwee and Ritter asserted that it was a recognized rule of transportation that where there was a productive interior, ships would proceed as far inland as physically practicable.”

The Commission record its conclusions as follows:—

“The Commission is inclined to agree with the statement that where there is a productive interior, ships will proceed inland as far as physically practicable. Notable examples of rivers on which a considerable traffic has been developed by ocean-going ships are the Amazon, the Yangtse-Kiang, the Rhine, the Danube, the Columbia and Willamette, the Delaware, the lower Mississippi and the St. Lawrence itself.”

This is one of the many instances in which the Commission has accepted the data of MacElwee and Ritter as “reliable and adequately covering the point in question.”

Needless to say no such recognized rule of transportation exists. Ocean ships will go anywhere for a cargo, *if it will pay.*

With two or three exceptions, navigation of the streams cited, by ocean-going vessels, is for short distances only, and under special conditions.

The Amazon was a particularly unfortunate illustration of the supposed rule. MacElwee and Ritter gave as ocean ports Manaos, 900 miles from the mouth of the river, and Iquitos 2200 miles from the mouth. As far up as Manaos the Amazon is practically an arm of the sea. So far as physical conditions are concerned, there is nothing to prevent ocean vessels from proceeding up the river to Iquitos, without the necessity of passing through a single lock. The trade between Manaos and Iquitos, however, is carried on in river steamers.

Nor was the Mississippi much better.

Herbert Knox Smith, U.S. Commissioner of Corporations and author of a voluminous and authoritative report on Transportation by Water in the United States, says:—

"Many of the vessels that enter the port of New Orleans could navigate the present channel of the Mississippi River for at least 300 miles. There is now and has been since 1901 a channel of 30 feet in depth from the head of the passes to Red River Landing, a distance of 320 miles. In other words there is a channel for 245 miles above New Orleans deep enough and wide enough to accommodate all of the ocean vessels that cleared at that port during March, 1910. And yet none of those vessels go up the river. *There is also depth enough to allow 72 of the 207 ocean vessels to visit Memphis or Cairo during five months of the year.*

Why ocean vessels do not navigate the part of the Mississippi that has sufficient depth is not difficult to understand. The business man would sum it up by saying "It will not pay."

"Even on the Hudson River practically no ocean steamers are seen at any distance above New York, although there is 25 feet of water as far as Hudson, 100 miles from the mouth of the river."

Needless to say, MacElwee and Ritter did not cite Herbert Knox Smith on this point in their brief.

While the Commission devoted considerable attention to the *physical possibility* of ocean-going vessels proceeding to the Great Lakes through the proposed waterway, the decisive and all-important question—Will it pay?—was apparently not considered.

And even from a purely physical point of view, none of the illustrations cited by the Commission affords conditions in the slightest degree comparable with the proposed waterway, involving passage through fifteen locks, and the navigation of such restricted channels as the Detroit and St. Clair Rivers.

BENEFITS TO CANADA

The report not only shows no evidence of any benefit to accrue to Canada from the undertaking, but the conclusions of the Commission clearly indicate that there is no present necessity for it so far as Canada is concerned, and that any advantages to be derived will be reaped solely by the Western States.

"These Middle Western and Western States are equipped in every way to take full advantage of the transportation facilities promised by the proposed deep waterway for the development of trade with the Atlantic and Pacific seabards of the United States and with overseas countries. And further, they are almost compelled to seek this new outlet to the sea by reason of the fact that the existing transportation agencies have for some years past found it exceedingly difficult to handle the situation."

On the other hand, with regard to Canada's interest the Commission say:—

"The compactness and uniform productiveness of the United States tributary area are lacking in the Canadian area. The population of the latter is about one-tenth of the former. Its resources as a whole are rich and varied, but its production falls very far below that of the United States area, particularly in manufactures. Except in grain it has nothing approaching the same quantity of products to fill the holds of vessels sailing from Great Lakes ports to overseas ports, and it offers to-day only a comparatively small market for return cargoes. So far from its population and industrial development having outrun its transportation facilities, the fact is that at the present time the railways of Canada are considerably ahead of the requirements of the country."

"The attitude in some parts of Canada appears to be that while in the course of time the Dominion might be expected to undertake the improvement of the upper St. Lawrence as a logical step in the creation of a deep water route from the sea to the head of the Great Lakes, the need for the improvement at the present moment is not so apparent in Canada as it appears to be in the United States."

Here again the Commission ignore the very important facts that—

1. Two Royal Commissions appointed by the Canadian Government have already arrived at the conclusion that a waterway of sufficient capacity to permit lake vessels to descend to tidewater is the most desirable, and

2. Canada possesses entirely within her own borders an advantageous route via the Ottawa River, which besides being very much less costly to improve, and avoiding the sacrifice of our present St. Lawrence Canals and loss of independent control of transportation of our own products, has numerous other advantages of both national and economic importance.

The report of the Commission quoted at length 23 conclusions of MacElwee and Ritter, but failed to include the 24th and final one.

It begins:—

“No greater opportunity for the successful development of commerce has ever been offered to mankind.”

and ends thus:—

“It has been forcibly stated by Senator Lenroot, and we now repeat in his language:—

“The West demands the St. Lawrence outlet to the sea, and because its demands are so just, so necessary for the future, not alone for the West, but of the entire nation, *no opposition from any source shall prevail against it*, and this great project which is more important to the prosperity of this country than the Panama Canal, shall in a few years be an accomplished fact. Upon the broad bosom of our Great Lakes, and in the harbours of our great cities, there shall fly the flags of every nation from the mastheads of ships coming from every part of the world, but with the upbuilding of our merchant marine there shall always be one flag more numerous than any other, the flag of the United States of America.”

This is forcible enough, and clear enough as to the results anticipated so far as the United States is concerned. But what about Canadian interests, and the benefit to accrue to Canada?

The answer has been supplied by Senator Townsend of Michigan, when he said, speaking in the United States Senate a few months ago:—

“We will get the benefit of whatever improvement is made. Canada could not under any circumstances profit as much as the United States. Her railroads afford her ample transportation facilities. We are short of railroad transportation”.

WATERPOWER DEVELOPMENT

The agitation for St. Lawrence improvement had its origin in the attempt made a few years ago by private interests in the United States to obtain control of the entire Long Sault power on both sides of the boundary.

The *Gazette* summed up the situation editorially in February last as follows:

“United States capitalists have had their eye upon the resources latent in the St. Lawrence for fifteen years or more, and a dozen years ago this country narrowly escaped the alienation of its rights at the hands of the Canadian Parliament. Following the non-success of the efforts of private interests during these years, there grew up the scheme of development by international agreement, a scheme which in the minds of many people represents nothing more nor less than the reappearance of an old friend with a change of clothing.”

“Back of the St. Lawrence Waterways project there has always been the shadow of a gigantic power exploitation, and the eagerness of the United States to get the Dominion committed to the principle of a waterways treaty has been manifest.

“The waterways proposal is at a standstill because of the Canadian Government's refusal to agree in advance to the negotiation of a treaty, and it is perhaps something more than a coincidence that this refusal should be followed by applications for power development rights by private interests backed by practically unlimited capital.”

“The movement deserves the attention of the Canadian Government because of its bearing upon the question of power development in the St. Lawrence, and because of the possibility that an attempt is being made to force the hand of this country.”

Following the failure of the attempt referred to above, due to strong opposition by public bodies both in Canada and in New York State, the Canadian Government, as a measure of defense of national interests on the St. Lawrence and to head off further efforts at encroachment on public rights, proposed to the United States Government that steps should be taken to devise some general plan under which development of power on the international section of the St. Lawrence should proceed consistently with preservation of rights of navigation.

The Order-in-Council containing this proposal stated;

“Even though the utilization of only a portion of the whole capacity of the river can be immediately contemplated, yet the endeavour should be to design at the outset a complete scheme into which successive developments might be fitted from time to time, as and when occasion might demand. Without some such scheme there is always the great danger that the ultimate possibilities of St. Lawrence navigation may be neglected or even irreparably injured.”

This clearly shows the aim of the Canadian Government to have been to conserve national rights on the international

section of the St. Lawrence, and especially to prevent such dealing with waterpowers as might injure navigation on the St. Lawrence.

The waterpower interests in the United States however, continued to be active. Only recently it has come to light that a large amount of money, stated by an American newspaper at \$250,000, was put up as a fund for "further investigations," and a few months later there sprang into existence in the Middle Western States an organization known as the Great Lakes-Tidewater Association, and the combined waterpower-navigation scheme was launched with ample funds for propaganda supplied by the States who were members of the organization.

By the terms of the reference to the International Joint Commission, shaped under the influence of strong pressure from the Middle Western States, the investigation became primarily one as to the improvements required to complete a 25 or 30 foot waterway on the St. Lawrence. Improvement of navigation was ostensibly the main object, and development of waterpowers was for the time being relegated to the background.

The scope of the investigation was broadly outlined by Question 1.

"What further improvement in the St. Lawrence River, between Montreal and Lake Ontario, is necessary to make the same navigable for deep-draft vessels of either the lake or ocean going type; what draft of water is recommended; and what is the estimated cost?"

"In answering this question the Commission is requested to consider:

- (a) Navigation interests alone, whether by the construction of locks and dams in the river; by side canals with the necessary locks; or by a combination of the two.
- (b) The combination of navigation and power interests to obtain the greatest beneficial use of the waters of the river."

At the public hearings attention was centred almost entirely on the navigation scheme. The Commission say in their report;

"Statements were repeatedly made during the hearings to the effect that while the movement for improving the St. Lawrence was nominally in the interests of navigation, it was really being engineered by water-power interests to serve their own ends. The Commission is confident that there is no justification whatever for these assertions. As a matter of fact very little testimony of any kind was offered at the hearings upon the power side of the question, public attention being apparently centered on the economic practicability of the undertaking as a navigation route."

The question may fairly be asked—If private interests hoped to ultimately secure control of the water-powers, how could their object be better served than by keeping public attention centered on the navigation features of the scheme?

They were at an impasse. No private corporation could hope to obtain permission to dam the St. Lawrence in the face of public opposition in both countries. It could be done only by joint action of the Governments. What more Napoleonic strategy could be imagined than the agitation for a deep waterway from a new quarter altogether with public attention focussed on the navigation feature of the scheme, and the parties interested in water-power development keeping dark?

It is perhaps a significant fact, as suggested by the *Gazette*, that since the report of the Commission was made permits have been granted to private corporations in the United States for more than the entire water-power which will belong to the United States.

One feature of the report calls for special notice. The only power development contemplated under the scheme recommended, and the only dams to be erected are in international waters. The maximum power development is to be made at the Long Sault where large expenditures have already been made and important rights acquired by private parties. In Canadian waters development by side canals is proposed, leaving the river in its natural state. If the system of development by dams is desirable on the international portion of the river, there seems no good reason why it should not be equally advantageous in the Canadian section.

The reasons advanced for this difference in treatment of the two sections of the river are; that the dam at the Long Sault will provide all the power that can be absorbed within a number of years after completion of the project, and that the United States should be enabled to enjoy the use of their equity in the water-power of the St. Lawrence as soon as possible.

The Commission of Conservation a few years ago opposed the granting of a charter to dam the Long Sault on the following, among other grounds;

"No market exists at the present time upon the Canadian side for the power proposed to be developed, or for any appreciable portion thereof. When any large quantity is required in the territory tributary to the proposed works it can be otherwise provided. There is within the radius of economic transmission abundant power available for development in purely Canadian territory."

"The suggestion that power can be generated on the Canadian side and exported to the United States, and that, thereafter, when it is required in Canada the Company can be ordered to deprive its United States customers of the power and deliver it in Canada is regarded as being entirely illusory. If the power is used in the United States, industries will be built up and vested interests created thereby, which it will be impossible to ignore."

Those reasons are just as effective to-day. The market on the Canadian side of the St. Lawrence in Eastern Ontario has not appreciably increased. Power to serve all possible needs in the Canadian tributary area can be developed at much lower cost on the Ottawa River, or on the St. Lawrence itself in purely Canadian waters. In fact, power is already being exported to the United States from the vicinity. And vested interests will be created by export whether the power is exported by a private company or a Hydro-Electric Commission.

The report of the Ontario Hydro-Electric Commission draws attention to the large potential markets in the United States for absorption of electric energy, and says:

"The relationship which such markets bear to Canada's share of the St. Lawrence River is that, for a time at least, it is probable that a portion of Canada's share of the available power may be used to supply the United States market to the mutual advantage of both countries."

It cites various authorities as to such market and further says;

"To meet such demands, the water-power derivable from Canada's share in boundary waters is coveted."

An engineer of the United States War Department is quoted as saying; with regard to Niagara power;

"If advantage of the power generated in Canada cannot be had on the American side, manufacturers will be attracted to Canada by this cheap power, and the industries of this country will suffer accordingly."

Also a former U.S. Secretary of War, speaking before the Committee on Foreign Relations;

"The investigation which has been made by the engineers indicates that Canada, if we do not take it, will use the entire power that the treaty permits in a very brief time, so that whatever effect any restrictions on importations would have would not protect the Falls for more than a very brief period, and it would result in giving to Canada, very possibly, a large number of industries which otherwise would be established on this side of the Falls."

The making of an independent survey and report by the Ontario Hydro-Electric Commission served notice on all parties that Ontario will claim the water-power developed on the Canadian side of the international section of the St. Lawrence. The method of dealing with it indicated by the report is to export the bulk of the power to the United States in the absence of a market in Canada.

The Hydro-Electric Commission estimates that in Ontario within a radius of 200 miles of the Long Sault, based on an annual per capita consumption of 1200 kilowatt-hours, there will be a demand for 190,000 H.P. for this portion of the Province by 1941. Within this area, however, about 1,000,000 H.P. can be developed on the Ottawa River alone, nearly half of it within distances of 45 to 100 miles from the Long Sault, and capable of development at far lower cost. On the other hand the demand in the United States within a radius of 300 miles is placed at 5,720,000 H.P. in 1931, and 8,790,000 in 1941. If these figures are reliable, so far as markets for power are concerned, the proposed development at the present time is comparatively for the benefit of the United States in the proportion of nearly fifty to one.

As part of the propaganda for the navigation feature of the scheme the argument has been widely used that the water-power development would pay the whole cost of the combined power and navigation works, giving the two countries a deep navigable waterway free of cost.

Governor Allen of Kansas, in debate with Governor Miller of New York:

"The whole project could be financed and paid for within fifty years from the power receipts."

O. E. Fleming, President of the Canadian Deep Waterways and Power Association:

"The country would not be involved in a debt to put the project through; the power users would pay the cost of capital investment, sinking fund and operation."

J. H. Duthie in debate with Senator Lynch-Staunton at Hamilton:

"The construction of a deep waterway to the sea will not cost Canada one dollar. It will be paid for through the sale of electric energy."

The total estimated water-power development of the St. Lawrence is 4,100,000 H.P., of which 2,636,000 H.P. is in the Province of Quebec. The water-powers are an asset belonging to the provinces, therefore if these statements mean anything at all they mean that the Province of Quebec is ultimately to bear 65 per cent. of the cost of the entire project. No wonder the Western States would hold up their hands for it, when it is represented to them on the one hand that they would gain \$200,000,000 a year in the price of farm products alone, and on the other hand, that the power users in Quebec, Ontario and New York State would finance the undertaking.

From the point of view that it is desirable that the United States should be enabled to utilize its share of the St. Lawrence water-powers, there might be something in the argument if the parties most interested in these powers were demanding that some action should be taken. As a matter of fact the State of New York in which the powers are situated and to which they belong has not only made no such request, but is strongly opposing the project.

Summing up the situation;

Canada's sole object in entering into negotiations in the first place was to protect our national rights and interests in navigation of the St. Lawrence against encroachments by private water-power development schemes.

Canada has no present need of or demand for the power, and when such demand arises can meet it much more advantageously by development of water-powers in purely Canadian waters.

The water-powers, except in so far as required for purposes of navigation, are the property of the Provinces, and should not be burdened with unnecessary expenditures to satisfy a demand based largely if not wholly on sentiment and having no sound economic basis to justify it.

INTERNATIONAL OWNERSHIP AND CONTROL

Canada has to-day a national waterway on the St. Lawrence above Montreal capable of accommodating vessels with a cargo capacity up to 90,000 bushels of grain. It has never yet been used to half its capacity, although it is the cheapest route between the West and the Atlantic seaboard, and capable of meeting all demands in sight for years to come.

It is now proposed to internationalize the whole system including the Welland Canal. Although under the plans proposed only one lock would be located in American waters, the entire waterway is to become international in ownership.

It is inconceivable that Canadians will agree to such a proposition. There is no good reason why the single lock to be located in American waters should not also be placed on the Canadian side of the river, and national ownership and control of the entire system of navigation retained by Canada. International dams are required only for purposes of power development. This is proved by the fact that in the Canadian section of the river no dams are proposed to be built, but development of the navigable waterway is to be made by side canals.

The objection will be raised that Canada cannot afford the proposed deep waterway at the present time, and that if the United States pay part of the cost they are entitled to share in ownership and control. This is undoubtedly true. But the obvious answer is that Canada does not need the deep waterway at the present time, that the demand for it is principally from the Western States and that development at the present time would be for their benefit rather than that of Canada, and that Canada should wait until she needs and can afford to pay for the improved navigation facilities and retain unimpaired national rights in the St. Lawrence.

To put the proposals in plain language they are simply that Canada shall sell, let us say a half interest in the St. Lawrence waterway to the United States for a money contribution towards the cost of making the proposed improvements. In the deal all our past expenditures on the St. Lawrence Canals would count for nothing, and as a result of it the United States would share the benefit of all our expenditures on creating ocean navigation on the St. Lawrence up to Montreal without any consideration whatever therefor.

Canada has assumed very heavy burdens in developing national trade routes for communication between the provinces

of the Dominion. Are we prepared to abandon this policy of national control of trade routes, and to substitute for it that of international ownership of that great artery of commerce the St. Lawrence waterway, nine-tenths of it in purely Canadian waters? Do we want a deeper waterway at such a price? Do we need it that badly? Can we afford to sacrifice national control of waterborne commerce between our Northwest and the Atlantic seaboard for a money consideration; in other words, as expressed by the Montreal Harbour Commission report, "to sell our birthright for a mess of pottage."

The International Joint Commission leave no doubt on the score that the Western States are to be the chief gainers. The project is described as giving them "a new outlet to the sea." The report of the Commission states:

"Unquestionably the rapid growth of sentiment favorable to the water route throughout the Middle Western and Western States has been due very largely to the serious situation created by the inability of the railroads to carry the ever-increasing load of traffic outbound and inbound between the West and the Atlantic seaboard. The feeling has been growing that unless some solution should be found for the transportation problem, the progress of this important and ambitious group of States would be seriously checked, and it was believed that the all-water route to the sea by way of the St. Lawrence would go a long way towards solving the problem."

The important point to remember is that there is already an "all-water route to the sea by way of the St. Lawrence," that it is open for free use by the Western States, and that until it has been found inadequate to meet the demands on it the call for enormous expenditures for improvements rests on no sound economic basis and cannot be justified. In all the propaganda in favor of the project it might almost be thought there was a conspiracy of silence with regard to the existing St. Lawrence waterway. Its very existence is ignored, and the project is described as opening a new route to the Great Lakes. Even in the report of the Commission, barring a brief list giving sizes of locks, date of construction, etc., and the mere statement that experiments in bringing ocean vessels to the Lakes through the present canals had not proved economically profitable, the present St. Lawrence waterway is not even mentioned.

If the Western States had contributed to the cost of the present St. Lawrence Canals, if they had been routing their traffic through them, and if under these circumstances the canals were unable to accommodate the traffic offering, then the transportation difficulties of those States might be held to afford some reason why Canada should join with the United States

in making improvements needed, but not even such a condition of affairs could be held to justify sacrifice of national control by Canada.

But none of these conditions exist. Canada has built, maintained and operated the canals at her own cost. They are open free of tolls to American vessels and shippers. Enlargement of the canals was undertaken in 1871, largely with a view to handling grain traffic from the Middle Western States which never materialized. The total traffic through the St. Lawrence canals to and from the Western States up to the date of the Commission's report, if it had paid tolls of \$1.00 per ton would not have yielded sufficient revenue to pay interest for one year on cost of construction and enlargement of the system.

In 1918 not a single ton of freight passed either up or down the St. Lawrence canals between United States ports. The only westbound freight to U.S. ports was pulpwood originating on the lower St. Lawrence. Other than coal, only a little over 100,000 tons of freight came down the St. Lawrence from U.S. ports, including 62,235 tons of oil and 42,683 tons of grain and flour. The entire shipments of merchandise to or from the United States through the St. Lawrence canals in 1918 were 9,324 tons. Figures for 1919 and 1920 were similar to those for 1918.

For the first time in 1921 large quantities of corn were shipped via the St. Lawrence canals, and these shipments fully demonstrated the ability of the present navigation system to handle satisfactorily an enormously increased traffic above any that has ever been moved through it either to or from the Western States.

There is no need to enlarge on the difficulties incident to international ownership and control. They are too obvious. The report of the Commission affords some striking examples in itself. One of the questions submitted to the Commission was:

"Upon what basis shall the capital cost of the completed waterway be apportioned to either country?"

They fell almost farcically short of furnishing a satisfactory answer. Their reply was:

"The capital cost of 'navigation works' and of the New Welland Ship Canal to be apportioned between the two countries on the basis of the benefits to be derived by each country from the use of the waterway."

and they proposed a method of defining these benefits by a new revision every five years, which would leave the question, Who is to pay for the improvements?, dangling as a bone of international contention for an indefinite period in the future.

On the basis proposed no one can possibly predict who will pay for the improvements, or who will own the waterway in the long run. If the Western States need it as badly as some of the propagandists affirm, and use it for a large volume of their traffic, then the St. Lawrence waterway will become to all intents and purposes a United States possession. If they divert their trade to an enlarged Erie canal or some other route, or if the railroads are again in a position to handle it, then Canada must pay the lion's share, if not virtually the whole cost of the undertaking.

Other suggestions have been offered, one that the cost should be shared on a fifty-fifty basis. Objection has been made to this that nine-tenths of the waterway is in Canada and that if American money is to be contributed, Canada should cede territory, say for five or ten miles on each side of the St. Lawrence, to form a zone similar to the Panama Canal Zone.

Should either nation become involved in war, while the other remained neutral, the difficulties would be greatly enhanced.

Disagreement has already arisen as to conditions under which a treaty should be negotiated. Both the plans of improvement and the apportionment of cost are contentious matters. Following these would come many others. The project would prove a veritable "apple of discord" to disturb the friendly relations between the two countries which it is to be hoped may long continue.

The only sound conclusion which can be reached is that if the present navigable waterway is to be deepened, Canada should carry out the necessary improvement, just as she enlarged the former canals from a 9 foot to a 14 foot channel, and has undertaken to still further deepen the Welland Canal. But this should only be done when the financial position of the country warrants, and without any sacrifice of national ownership and control of St. Lawrence navigation.

It should be kept in mind that further improvement of the St. Lawrence is not the only policy open to Canada at the present time. We have wholly within our own territory an

alternative route free from any international entanglements, which very many Canadians believe should have been opened for traffic years ago, and which most certainly would have been had it been located on the American side of the boundary.

The Georgian Bay—Ottawa River route would be 300 miles shorter, and could be made capable of accommodating any vessel suitable for the Great Lakes. Not only would it be the shortest, quickest and cheapest route possible between the Great Lakes and the Atlantic seaboard, but it would open up for development natural resources of great value. Only by development of the resources of the great hinterlands lying to the north of the settled portions of the provinces can Canada attain the full measure of national growth and wealth to which she is by nature entitled.

Lumber alone would produce a large traffic on the route. Pine cut in the Ottawa Valley represents 1,000,000 tons yearly. The waterway would cheapen transportation to markets east and west. Chicago alone in 1920 imported 2,400,000,000 feet of lumber, or over 2,000,000 tons. Nova Scotia coal could be carried into the heart of Ontario, and railway development and operation in the North would be cheapened. Pulp and paper mills in Northern Ontario receive or ship already nearly 1,000,000 tons yearly. Large iron ore deposits would be made available. Marble, phosphate, and many other minerals are found along the route. Both Ontario and Quebec would be given hundreds of miles of additional water front.

1,000,000 H.P. of water-powers would be incidentally developed on the waterway itself, and probably as much more would be made available on tributary rivers and on the Ottawa itself above Mattawa. The possibilities of industrial development are enormous. A well-known Toronto engineer in a discussion before the Canadian Society of Civil Engineers some years ago stated;

"With the rapid depletion of the high grade iron ores, and the increase in the cost of coal which must come from the great waste and rapid exhaustion of the easily mined high grade seams, the great advantages possessed by Pittsburg and the Ohio Valley as a manufacturing centre will disappear. With the disappearance of the great advantages now enjoyed by Pittsburg will come "Canada's great opportunity."

"The construction of the Georgian Bay Canal will develop a very large amount of water power. It is conservatively estimated that the Ottawa and its tributaries will give 3,000,000 H.P., equivalent in power requirements to the mining of 40,000,000 tons of coal per annum.

This water power, unlike coal, can never be exhausted, and with the rapid depletion of the coal and iron in the United States, and with the enormous horse-power of the Ottawa and its tributaries and the low grade iron ores of the Ottawa Valley, it is easily possible that in years to come the great manufacturing centre of this continent may be transferred from the Ohio Valley to the Ottawa. There is no reason why it should not if the people of Canada have the enterprise to make it so. For such reasons as this I believe that the construction of the Georgian Bay Canal is a national necessity. I do not say that the construction of the Georgian Bay Canal will at once transform the Ottawa Valley into a great manufacturing centre, but it will make it possible, as, with abundance of iron ore, abundance of the cheapest and best power in the world, with a deep draught canal permitting ocean freighters to penetrate into the heart of the Ottawa Valley, there seems to be no reason why it should not become in time as great a manufacturing district as any in the world."

"The development of power on the St. Lawrence does not seem quite as important to Canada as it does in the Ottawa."

NAVIGATION BY OCEAN-GOING VESSELS

With regard to navigation of the waterway by ocean-going vessels the report says:

"The Commission was impressed by the statement—that out of 14,513 steamships listed in Lloyd's Register for 1918-19, 81.45 per cent. had drafts of 25 feet or less, and 99.32 per cent. drew 30 feet or less. This statement, confirmed by other evidence secured by the Commission, makes it clear that 30-foot canals on the St. Lawrence and in the Welland would accommodate all the ocean-going vessels of the world with the exception of such deep draft vessels as the great modern liners, and even 25-foot depths in the same canals would be sufficient for a very large majority of ocean craft."

Such a statement, though apparently convincing to the Commission, could only serve to befog the real issue and lead to false conclusions.

Lloyd's Register includes vessels from 100 tons upwards. More than half the vessels on the Register are of less than 1,000 tons gross tonnage. A large percentage of them could pass through the present St. Lawrence canals. An investigation of the reasons why they do not do so would have given valuable light on the subject.

The conclusion drawn by the Commission is grossly misleading, for it implies that vessels drawing up to 25 feet could utilize the 25-foot waterway, and those up to 30 feet the 30-foot waterway.

The same assumption was recently made by Senator Townsend of Michigan in the United States Senate, when he stated:

"Three-fourths of all the ships now sailing the seas between the United States and Europe draw water less than the 25 feet this canal proposes."

It was also repeatedly made in the MacElwee-Ritter brief.

The assumption can only be described as ridiculous.

Vessels leaving Montreal to pass through the St. Lawrence ship channel must have 2 ft. 6 inches clearance beneath the keel at the existing water stage to obtain the Port Warden's sailing permit. Application of the same rule on the extension of the route proposed would limit the effective loading draft of vessels to 22 ft. 6 inches in a 25-foot channel, and to 27 ft. 6 inches in a 30-foot channel. The outside limit of permissible draft would not be more than 23 feet in a 25-foot channel, and this would necessitate a very slow rate of travel.

As the conclusions of the Commission with regard to use of the waterway by ocean-going vessels are based on the above assumption, their reliability may be judged accordingly.

The proposed project being simply an extension farther inland of the ocean-going navigation already existing as far up as Montreal, the obvious course to pursue was to make a careful study of the present traffic, of the vessels engaged in it, and the conditions under which it is carried on. The Commission, however, appear to have been satisfied to rely upon the brief of MacElwee and Ritter and the statements of witnesses from various points on the Great Lakes, supplemented by the misleading percentages based on Lloyd's Register.

There has been a 25-foot ship channel on the St. Lawrence as far as Montreal for over forty years, and a 30-foot channel since 1906. Six hundred and thirty-eight vessels in the trans-Atlantic trade entered the port in 1920. Full information with regard to this existing traffic was of the utmost importance. It was readily available and could have been easily obtained by the Commission. There is nothing in their report to indicate that it was given the slightest attention. The brief filed for the Great Lakes Tidewater Association, instead, went extensively into traffic conditions on such rivers as the Amazon and Yangtsekiang. A mass of information was collected with regard to *production*, but apparently no study whatever was made of actual imports and exports in relation to the waterway.

The argument was advanced that a special type of vessel would be developed to use the waterway. The report of the Commission states that

"In the opinion of Messrs. MacElwee and Ritter it would be a very small step in naval architecture to design an ocean-going vessel capable of carrying 10,000 to 15,000 tons on a draft of 25 feet."

"A Duluth ship builder is quoted to the effect that a composite type of ship would be developed that would be in the nature of a cross between the present ocean-going tramps and the lake freighter that would prove economical both in original cost and operation."

The weakness of such proposals was very clearly stated in a report made several years ago by Major T. W. Symons of the U.S. Army Engineers on Deep Waterways:—

"While it is possible from an engineering standpoint to build a vessel which shall combine to a limited extent the particular necessities of both lake and ocean vessels, such a vessel would not be a good business enterprise. However carefully a vessel may be designed for service on both lakes and ocean, she must necessarily be a compromise between two widely differing types, and inferior to each on its own waters. She can neither carry cargoes on the lakes as cheaply as the lake ships, nor on the ocean as cheaply as the ocean ships."

The Commission, however, reached the conclusion that

"The type of ocean vessel that would probably use the St. Lawrence route would be the average-sized tramp."

TRAMP STEAMERS

During the season of 1921, there were 296 entries of tramp steamers in the Port of Montreal. When loaded, 29 of these drew under 20 feet of water, 89 drew from 20 to 23 feet, and 178 over 23 feet. Thus 60 per cent of the tramp vessels visiting Montreal in 1921 could not pass through the proposed 25-foot waterway with full cargo. The proportion of the total freight carried in these larger vessels was naturally much higher. Vessels of the smaller class carried an average cargo of 160,000 bushels of grain, while those which left port loaded deeper than the proposed 25-foot channels would permit to pass, carried an average cargo of 260,000 bushels. Over four-fifths of the total grain handled by tramp steamers was in vessels which could not navigate the proposed waterway with full cargo. The movement of tramp steamers to Montreal was almost entirely in connection with the grain trade. Nearly all came in light, only one tramp out of nearly 300 carrying cargoes both ways. The entire import trade, other than sugar and oil, was handled by liners.

When it is realized that lake freighters carry as high as 500,000 bushels on a 20-foot draft with lower operating costs, the disadvantage of the tramp steamers on the long run of about 1,300 miles between Montreal and the head of the lakes obstructed by locks and restricted and tortuous channels, as compared with the lake freighters, is very evident, even assuming their rate of travel to be the same. Owing to their construction, however, tramp vessels could not be handled as easily as the lake freighters through the locks and restricted channels, and would necessarily take a great deal longer time to make the trip. They would also incur heavy special pilotage charges which are not paid by the lake vessels.

GRAIN FREIGHT RATES

Extravagant claims have been made as to saving on cost of carriage of grain which would be effected by the proposed improvement. This has been stated at 5 to 10 cents per bushel or even higher.

W. Sanford Evans, who, as chairman of a Royal Commission appointed by the Canadian Government for the purpose, has very thoroughly investigated grain transportation, writes as follows in a recent article in the *Grain Trade Review*—

“In normal times the *total rate* on wheat from Fort William to Montreal by *the present canals* is only about 5 cents per bus.”

Taking the period 1912-1915 as illustrating normal traffic conditions, he further says:

“Average all water rates, 1912—5.77c per bus., 1913—5.35c, 1914—4.58c, 1915—4.99c. For the four years the mean of these average rates is 5.17c per bus. Ship owners out of the above rates had to meet payments for clearing and trimming at Fort William and for elevation and shovelling at Montreal, which totalled .59c per bus. This reduces the average charge for the actual carrying of grain from the head of the Lakes to Montreal during these four years to 4.58c per bus. A cut of 5c per bus. or more in such rates as these would seem rather too much to expect.”

“The alternative to the all-water route to Montreal is the lake-and-rail route through Georgian Bay and other eastern lake ports. The average water rate charged from Fort William to Georgian Bay ports during the above four years was 2.47c per bus., and out of this the vessel paid .38c per bus. for clearing, trimming, etc. In arriving at this average rate of 2.47c, the heavy shipments in the last few days of November and the first two weeks of December, which always command high rates, were taken into the reckoning. This wheat is for winter export or domestic consumption, and the rate on the wheat that went out on the ocean before the close of navigation at Montreal would probably not have averaged more than 2c per bus. during that period.”

“From Georgian Bay ports to Montreal the rail rate was 5c per bus. The railways paid the cost of elevation at the lake ports and of elevation and delivery to ocean vessels at Montreal and shippers were given the privilege of 30 days' free storage at lake ports and of 20 days' free storage at Montreal. The railways carry the insurance while the wheat is in their cars, but not while in elevators, whereas the shipper pays insurance on grain in lake and canal vessels.”

“The combined lake-and-rail rate of 7.47c per bus.—or of, say, 7c per bus., if the high lake rates at the very end of the season be left out of account—with the storage privileges and a little saving on insurance, completed during these four years with an all-water rate to Montreal of 5.17c and was sufficiently attractive to shippers to secure a good volume of traffic.”

"If, without other cost to a shipper, and with certain valuable privileges to him, wheat can, under normal financial conditions, be taken out of a lake freighter at Georgian Bay ports and put aboard an ocean vessel at Montreal for 5c per bus., it is manifestly impossible that, merely by deepening the St. Lawrence Canals by a few feet, the cost of transporting export wheat could be reduced by 5c per bus., that is, reduced by an amount equal to the total railway charge in the combined lake-and-rail rate. Unless a lake freighter, or an ocean vessel could carry 1216 miles to Montreal at the same cost as it could carry 540 miles to Georgian Bay, which it is absurd to suggest, then as much as 5c could obviously not be saved, on the through rate to Montreal. From Montreal to the foreign port, the wheat, once free on board, can go at least as cheaply in a vessel that turns around at Montreal as in a vessel that has previously made the trip through the canals to Fort William and back. Indeed, more economical ocean carriers, combination liners and the bigger ocean freighters, can come as far as Montreal than could or would go up the canals. There could be no saving on the ocean end of the journey."

"At the present time the ex-lake-rail rate to Montreal is 8.6c per bus., but vessel costs and rates, both on the lakes and on the ocean, are also proportionally at least as much higher than normal, and it would not be possible, merely by opening a bigger canal, to reduce even to-day's costs f.o.b. Montreal by anything like 5c per bus. Long before the new canal could be built rail rates will undoubtedly be back to 5c per bus., or, if they are not, it will be because cost of all kinds, and therefore the costs of operating vessels, retain a higher nominal money value. The relationship is not likely to be radically altered."

"In view of the facts about rates, it is evident that any economy in transportation that may be effected by substituting 25-foot canals on the St. Lawrence for 14-foot canals, must be estimated only in fractions, and not in multiples of 5c per bus."

PRESENT ST. LAWRENCE CANALS

The advocates of joint international control of the St. Lawrence entirely ignore the present waterway owned and controlled by Canada. They talk of the proposed scheme as opening up a new route to the sea.

The railway transportation problems of the Western States and the magnitude of their products fill many pages of the report of the Joint Commission, but there is not a word to be found with regard to the important traffic already carried through the present St. Lawrence Canals, or of their great value to commerce. On the contrary, it constantly describes the St. Lawrence as a "new route."

Thus, after stating that the Middle Western and Western States are equipped in every way to take full advantage of the proposed deep waterway, it says:

"And further, they are almost compelled to seek this *new outlet to the sea* by reason of the fact that the existing transportation agencies have for some years past found it exceedingly difficult to handle the situation."

It might be inferred from this statement, by those ignorant of the facts, that the St. Lawrence Canals were already overtaxed, but nothing could be further from the truth. They have never yet been used to one-half their capacity, and can handle easily all the traffic now in sight or likely to be for years to come.

The report further states:

"The feeling has been growing that, unless some solution should be found for the transportation problem, the progress of this important and ambitious group of states would be seriously checked, and it was believed that *the all-water route to the sea by way of the St. Lawrence* would go a long way toward solving the problem."

There has been for years past and is now an all-water-route to the sea by way of the St. Lawrence. It has been and is the cheapest means of communication between the Great Lakes and the seaboard. It has long been free and open to the people of the Western States on equal terms with Canadians though built and operated by Canada, and their trade through it has been insignificant.

Again the report says:

"That the banking and other facilities of this region were adequate to take care of its foreign trade, whether that trade followed existing channels, or was diverted to such a new route as the St. Lawrence water-way."

"The benefits to be derived from the opening of a water route to the sea will therefore accrue in much larger measure to American than to Canadian interests."

"When these cities (Detroit, Cleveland, etc.) and their tributary territory *are given access to the sea* they will find it necessary in order to secure the maximum benefits of *this new route, etc.*"

"As to the economic practicability of the waterway, the commission finds that, *without considering the probability of new traffic created by the opening of a water route to the seaboard*, there exists to-day, etc."

"If the tributary area in the United States is increasing so rapidly in population and production and foreign trade that it is impracticable for the railways to keep pace with that increase, the obvious remedy is to develop other transportation facilities that will meet the needs of the West by lifting some of the burden from the railways. Such a transportation is *the proposed water route to the Atlantic seaboard.*"

The last quotation raises another point of interest. We in Canada are not so much concerned in "lifting some of the burdens from the railways," as we are in finding additional traffic for them which will enable them to pay their way without annual drafts on the public treasury.

The Commission say with regard to the railway situation in Canada:

"That situation unquestionably is due to the fact that railways in Canada have been developed in advance of the requirements of the country, and the chief remedy will be found only in increased population and consequent increased tonnage of commodities for movement by the railways and increased passenger, express and other revenues. Canada must secure this increase through settlers who will occupy the unoccupied land in the West."

Thus the "obvious remedy" for not enough railways in the Western States is to lift some of the burden by diverting freight from them to the proposed deep waterway. But Canada suffers from too many railways and not enough freight to make them pay. Clearly if the remedy works a benefit to the Western States, it must also make Canada's railway situation worse than before.

APPENDIX

IN THE MATTER OF AN INVESTIGATION CONDUCTED BY THE
 INTERNATIONAL JOINT COMMISSION, SITTING AT MONTREAL
 ON OCTOBER 8 AND 9, 1920, ON CERTAIN QUESTIONS RE-
 LATING TO THE DEEPENING OF THE WATERWAYS ON THE
 ST. LAWRENCE RIVER BETWEEN LAKE ONTARIO AND MONT-
 REAL

Memorandum submitted by The Shipping Federation of Canada, a body incorporated by the Parliament of the Dominion of Canada, whose main object is to safeguard the interests of navigation, more especially of the St. Lawrence, and whose President and members are representatives of the principal lines trading to the Atlantic, South African, West Indian, South American, East Indian, Australian, New Zealand and Mediterranean ports from the St. Lawrence, and also of the coasting lines trading between Nova Scotia, Newfoundland and St. Lawrence.

The question of the proposed deepening of the waterways on the St. Lawrence River between Montreal and Lake Ontario has been given careful consideration by the Federation and its members, and it was unanimously decided to go on record as being opposed to the proposed scheme for the following reasons, which are given herewith in brief.

(1) Navigation interests on the St. Lawrence require all the depth of water available between Montreal and the sea, and if dams and power plants are constructed in conjunction with the proposed system of deep waterways there may be a tendency to store up water during the off-peak hours which might cause dangerous fluctuations of the water-levels of the river below Montreal. The flow of the river is now regulated by nature, and navigation interests do not desire to have this replaced by artificial control for power purposes as the predominant factor.

(2) No well defined plan having yet been put before the public for consideration, and until such a scheme is submitted, with full report and plans, we must protest against work of any kind being done. In submitting our protest, we have to further say that the entire scheme of the so-called deep waterways system, and the results which it is hoped to get from it, is not an economically sound proposition from a commercial standpoint.

The cost we believe to be greatly underestimated. For a 20-foot canal it was variously considered that \$150,000,000 would build a 20-foot waterway from Montreal to Port Colborne, divided:

\$50,000,000 for the Welland, and
 \$100,000,000 for the St. Lawrence Canals.

Welland has already spent, we understand, \$50,000,000, and is yet uncompleted, and it is doubted whether this work can be finished under a total cost of \$100,000,000.

Estimate for the St. Lawrence Canals, for which original estimate of \$100,000,000 was given, has now been increased to approximately \$120,000,000 in various reports which we have seen, but in the light of the work which has been done on the Welland Canal it is safe to estimate that the St. Lawrence would cost probably \$200,000,000, and then only for a 20-foot channel.

If, as is strongly hoped for by some of the lake ports, vessels of 30-foot draft will navigate in the future from Montreal to the head of the lakes, the cost of the canals would be enormous; we are afraid to give an estimate, as in all works of this kind the greater the depth the greater the multiple of cost; for not only would the St. Lawrence Canals have to be built, but the waterway or approaches to the canals would also have to be deepened, which in all probability would mean a dredged channel from Montreal to Lake Ontario and again up the Detroit and St. Clair Rivers, and the rebuilding of the Welland and Sault Ste. Marie Canals to 30 feet.

It is not an economical transportation question. Trade, like water, seeks its own level. The reason to-day why steamers make their terminus at the various Atlantic ports, including Montreal, is on account of the unobstructed navigation. As soon as you have obstructed navigation, such as with canal locks, you immediately increase the cost of transportation. From an economical point of view it is improbable that ocean-going vessels will ever make a practice of trading to ports on the Great Lakes, no matter to what extent the canal systems west of Montreal are enlarged and deepened, as the cost of upkeep of an ocean steamer, the delays of proceeding through the canals, and the danger of damage, would be too great to make them a revenue paying proposition. Ocean vessels are designed for use in waters of great depth and unlimited width, which they navigate with unrestricted speed and comparative safety, but on rivers, canals and other contracted waters they must materially reduce speed, and frequently require the assistance of tugs. Furthermore, vessels constructed for ocean service are designed to give the maximum stability and stiffness to resist the severest weather and wave action, while vessels plying on the Great Lakes are of lighter construction, fitting them for the lake trade. It will, therefore, be realized that vessels built for the ocean trade could not be used economically in the lake trade, while vessels constructed

for the lake trade would be unsuitable for the ocean trade by reason of their lighter construction. The most economical manner to handle freight between Montreal and the west is to continue, as has been done in the past, the building of lake vessels at much cheaper cost to suit the canals for carrying cargoes on the inland waters and transfer to or from the ocean steamer at the seaport.

When we read in speeches of such men as the secretary of the Illinois Manufacturers' Association that they will see deep draft ocean liners from Seattle, Vancouver, San Francisco, Vladivostok, Yokohama and other oriental ports sailing up the St. Lawrence through the canals to Chicago, it almost makes you think that they have lost their senses in the West. A glance at the map, showing the roundabout voyage a vessel would have to take, should make a man hesitate before voicing such statements. While it may not be impossible, it is nevertheless true that it is impracticable and unsound economically.

(3) We cannot too strongly protest against interference with the St. Lawrence waterway. The St. Lawrence drains nearly half the North American continent, including all that territory between the watershed of Hudson's Bay and the Mississippi River.

The St. Lawrence River is noted for the fact that it never overflows its banks, it is sufficiently large to take care of the freshet and floods created by ice jams which are purely local in character, but if dams are built in the river without the necessary data beforehand to work upon regarding conditions of the movement of the ice in the spring and fall, very serious conditions might arise, and the river, which has up to the present been able to take care of the flow of water through it, might be found to flood its banks and immense damage be the result.

It has been stated that these improvements to navigation are also to develop electrical power along the route. Care must be taken that this electrical power is not for any private or personal corporation. At the Long Sault a company owns 3,700 acres on the United States side and over 300 acres on the Canadian side, or a total of over 4,000 acres, so that they probably control both sides of the rapids at the most advantageous points.

It is felt that the scheme which has been proposed emanates from private companies, who are simply seeking to

create large water-powers, the scheme providing for the erection of high-level dams in the international portion of the St. Lawrence with a view to the utmost power development; and there is reason to fear that, in the diversity of interests, the navigation interests of the St. Lawrence may suffer through control of the water to suit power users.

(4) Another important point which must be considered is the flow of water through the St. Lawrence. Already, owing to the action of the Chicago Drainage Canal, it is reported (according to reports made by Messrs. McLeod, Francis and Surveyer, three noted hydraulic engineers) that water in the St. Lawrence has been reduced by 6.3 inches. The Chicago Drainage Commission are desirous of increasing the flow of water from Lake Michigan into the Mississippi, and in the late session of the Association of Port Authorities at Chicago it was publicly proclaimed that they look forward to the time when they will have navigation from the Mississippi up the Illinois River and Chicago Canal to Chicago, both bringing up the products of the south and exporting from Chicago the products of that city in competition with the development of St. Louis.

How can they secure this navigation except by taking additional water from Lake Michigan? By taking further water from Lake Michigan they also take water from the St. Lawrence, thus requiring further excavation of the St. Lawrence Canals and channels, and also at the various lake ports. They would defeat, as it were, with the excavation of the Chicago Canal, on the one hand, the navigation which they so dearly wish to get on the other through the St. Lawrence.

(5) In the report of the International Waterways Commission on the regulation of Lake Erie (1910), on pages 83 and 84, paragraphs 153, 154 and 155, the Commission states that "to regulate the levels of Lake Ontario would cause higher water in the first part and lower water in the last part of the navigation season on the St. Lawrence canals. Such results would injuriously affect navigation."

(6) We are opposed to canals being built internationally. The canals in Canada should be built and owned by the Dominion government; there should be no international system of canals in Canada which the Dominion government do not absolutely control.

In the scheme, we understand, that along the Long Sault Rapids the canal would be constructed on the southern side of the river. This would mean that eventually a canal on the northern side of the river would have to be built by Canada in a similar manner to the canal she had to build at Sault Ste. Marie. In addition to the cost to Canada of these canals, she would have to bear the entire cost east of the boundary line. In other words, we are already contributing to the cost of the Welland Canal to 25 feet, and would have to build a canal on our own side of the Long Sault and the St. Lawrence Canals, as well as reconstruct the Welland and Sault Ste. Marie Canals to 30 feet, as mentioned in a previous paragraph.

Electrically, what would Canada benefit? She would get 50 per cent. of the power developed at the Long Sault at the eastern end of Ontario, where she has immense water power in the middle of Ontario awaiting development, of which she would have the entire product, and that in the neighborhood where the power could be delivered to the consumers at cheaper cost.

In other words, this great development which has been proposed is one which would vastly more benefit the United States than it would Canada, and very close consideration must be given to the project before the Canadian government becomes a party to it. Rather it would be better for the Dominion government, before a scheme to deepen the St. Lawrence waterways is adopted, to give consideration to the proposed Georgian Bay Canal, which is the most advantageous route for Canada to construct. The advantages of this route are many, the principal ones being that the proposed route would be entirely in Canadian territory. The distance is shorter, the cost of construction less, it borders the two provinces of Ontario and Quebec, and would develop new territory and resources in both, including immense water powers, the electric product of which would be distributed over the two provinces at the lowest cost.

(7) Another point must not be lost sight of, and that is that all this work would require remedial work below the city of Montreal to safeguard the St. Lawrence below this point.

We have stated at the beginning of our remarks that trade, like water, seeks its level. Remedial works in the St. Lawrence below Montreal might be the means of stopping vessels at Quebec, for the very simple reason that navigation in the St. Lawrence above Quebec would be slower and more difficult than it is to-day.

(8) Another point which the would-be beneficiaries of this scheme overlook is that the St. Lawrence navigation in the spring of the year would likely be opened two or three weeks later than at present on account of the ice not being able to move out by natural causes; naturally if it were held back by dams it would have to melt instead of moving out as it does now in a series of shoves. How much longer the ice would take to clear the St. Lawrence no one can tell, but it is a dangerous thing to interfere with Nature which at present serves us so well. It might be the means of diverting a large part of our St. Lawrence commerce to the United States ports, and we believe in the motto, "Hands off the St. Lawrence River."

(9) Finally, would it not be judicious for Canada, before entering into any international agreement with the United States about building canals, or improving our waterways, to require first that the United States government should compel the Chicago Drainage Canal Commission to fulfill their obligations and reduce the flow of water through the canal? An agreement was entered into with the Washington government as to the flow of water, and other works to be carried out on the Drainage Canal, but still the Chicago Drainage Canal has gone on increasing the water supply through the canal until it is interfering with the levels of the St. Lawrence River. (See Report of the Secretary of War for the United States, dated 13th January, 1913, pages 6 and 11.)

(10) In conclusion, the Federation is of the opinion that our finances want careful study before fresh obligations are entered into which would involve this country in the expenditure of millions of money, and this unremunerative money, as canals along the border are free, so that the expenditure must be carried by the people already heavily taxed. Therefore, the Federation is further of the opinion that any project for canalization extensions should be subject to extremely close scrutiny and all alternative routes should be carefully considered before any action is taken.

The whole most respectfully submitted.

Montreal, October 7, 1920.

(Signed)	R. W. REFORD, <i>President.</i>
(Signed)	THOMAS ROBB, <i>Secretary</i>

IN THE MATTER OF AN INVESTIGATION CONDUCTED BY THE
INTERNATIONAL JOINT COMMISSION ON CERTAIN QUESTIONS
APPERTAINING TO THE WATERWAYS OF THE ST. LAWRENCE
RIVER WEST OF MONTREAL.

Final reply of The Shipping Federation of Canada (Incorporated) to report of Engineers appointed by the Governments of Canada and the United States on the proposed St. Lawrence Power and Navigation project, submitted to the International Joint Commission.

The Shipping Federation of Canada is a body incorporated by the Parliament of the Dominion of Canada, whose main object is to safeguard the interests of navigation, more especially of the St. Lawrence, and whose president and members are representatives of the principal lines trading from the St. Lawrence to the Atlantic, South African, West Indian, South American, East Indian, Australian, New Zealand and Mediterranean ports, and also of the coasting lines trading between Nova Scotia, Newfoundland and the St. Lawrence.

The question of the proposed St. Lawrence Power and Navigation Project, between Montreal and Lake Ontario, has been given careful consideration by the Federation and its members, and it was unanimously decided to go on record as being opposed to the proposed project for the following reasons, which are given herewith in brief:

1. The project of constructing, between Lake Ontario and Montreal, a waterway on the St. Lawrence River having a depth of 25 feet, and to erect at the Long Sault a power house having a capacity of 1,464,000 horse-power, at an estimated capital cost of \$252,728,200, and a maintenance cost of \$2,562,000 a year is economically unsound for the following reasons:

2. It would not be commercially practical for ocean-going vessels to trade between Montreal and the Great Lakes ports in competition with the lake freighters. The fixed charges and operating expenses on the lake boats are so much smaller than on the transatlantic steamers that, even counting the transhipping charges, the lake boats could handle the traffic above Montreal at a cheaper rate than the ocean-going boats. The lake boats, on the other hand, on account of their light construction, are entirely unsuited for ocean trade.

3. The estimate of \$252,728,200 for a 25-foot navigation between Montreal and Lake Ontario does not give any idea of the sums which would have to be spent in deepening the harbors of the Great Lakes and the connecting channels between the various lakes. The depth of Great Lakes' har-

bors and channels does not average over 20 feet, and E. H. Outerbridge, Chairman of Port of New York Authorities, claims that this work would cost from \$500,000,000 to \$1,000,-000,000. To this sum should also be added about \$75,000,000 to cover the expenditure for the deepening of the Welland Canal. The important item of interest during construction has also been apparently neglected.

4. To the estimate of maintenance costs, \$2,562,000, should be added the maintenance cost on the Welland Canal and the fixed charges on the whole capital expenditure. No mention of these fixed charges is made in the report, and on the Lake Ontario-Montreal division alone they would mount up to over \$20,000,000 a year.

5. No evidence has been submitted to the Shipping Federation of Canada demonstrating that the probable traffic requirements were such as to justify the enormous expenditure required to provide 25-foot navigation from Fort William to Montreal. Besides, if a deeper waterway were required, preference should be given to the Ottawa route, which has the advantage of being shorter and of being entirely in Canadian territory.

6. The report states that the water-power development should be considered as a by-product of the navigation project, but there is nothing to show how the sale of this power or of the power rights would help to carry the navigation project.

7. The navigation interests on the St. Lawrence require all the depth of water available between Montreal and the sea, as each inch of available depth in Montreal Harbor means an additional cargo of 52 tons. Nearly every year the depth of water in the so-called 30-foot channel is appreciably less than 30 feet. It has been as low as 26 feet. This reduction in the available depth has been brought about partly by the dredging and partly by the Chicago Drainage Canal diversion.

8. The report of the Canadian and American engineers states that a daily fluctuation in the pool above the proposed Long Sault dam of 1 foot 5 inches is anticipated, and further, that "it is not probable that variations will occur greater than can be compensated for by the use of Lake St. Francis as a flattening agency." The shipping interests claim that it is impossible to predict these fluctuations without knowing exactly the nature of the load of the proposed plant and that the storing up of the water during off-peak hours would most

probably occasion dangerous daily fluctuations in the level of the river at and below Montreal.

9. In conclusion, the Shipping Federation of Canada is of the opinion that in view of the ever-increasing burden of direct and indirect taxes in Canada, no new construction should be undertaken without being assured that the tangible returns will be sufficient to cover both the maintenance costs and the fixed charges.

The whole respectfully submitted.

(Signed) R. W. REFORD,
President.

(Signed) THOMAS ROBB,
Secretary.

Montreal, Sept. 30, 1921.

MONTREAL BOARD OF TRADE

Resolution of the Montreal Board of Trade passed on the 18th March, 1921;—

"That navigation interests on the St. Lawrence require all the available depth of water between Montreal and the sea and that this might be interfered with by the proposed dams and power plants in conjunction with the said system of deep waterways. That is, as strongly hoped for by some of the lake ports, vessels of thirty-foot draft would in the future navigate from Montreal to the head of the lakes, the cost of the canals would be enormous, for not only would the St. Lawrence canals have to be deepened, but the waterway and approaches thereto, also, and this in all probability would mean a dredged channel from Montreal to Lake Ontario and again up the Detroit and St. Clair Rivers, also the rebuilding of the Welland and Sault Ste. Marie canals.

"That the reason why steamers make their terminus at various Atlantic ports including Montreal is because of the unobstructed navigation thereto, and that from an economical point of view it is improbable that ocean-going vessels would ever make a practice of trading to ports on the Great Lakes, no matter to what extent the canal systems west of Montreal are enlarged and deepened, as the cost of the upkeep of ocean steamers, the delay in proceeding through the

canals, and danger of damage, would be too great to make them a revenue paying proposition. Ocean vessels are designed to give maximum stability to resist the severest weather and wave action, while vessels plying the Great Lakes are of lighter construction, and it is therefore obvious that vessels built for ocean trade could not be used economically in the lake trade, while vessels constructed for the lake trade would be unsuitable for the ocean trade.

"That canals should not be built internationally and that those in Canada should be built and owned by the Dominion Government.

"That the cost of the proposed deep waterways system is believed to be greatly under estimated, and that instead of the original estimated cost of one hundred millions for the St. Lawrence canal, it is believed that the said cost would aggregate two hundred and fifty million dollars, and that for only a twenty-foot channel. That finally, it is felt that the finances of the Dominion demand very careful study before fresh obligations are entered into which would involve Canada in the expenditure of millions which would be unremunerative as canals along the border are free."

REPORT OF THE NEW YORK STATE COMMISSION

WIDESPREAD OPPOSITION TO THE ST. LAWRENCE PROJECT

It was reported some time ago at Ottawa that the Dominion Government was indisposed to assume the joint liability for the cost and maintenance of such a waterway as that recommended by the International Joint Commission. Among the grounds on which opposition to the project is based are the following:

1. That the proposal is only a camouflage for the development of water power, with Americans the beneficiaries.
2. That it is not economically feasible for ocean-going ships to traverse narrow channels.
3. That, as a matter of policy, it would be unwise for Canada to internationalize the St. Lawrence River and the Welland Canal.
4. That the damming of the St. Lawrence would have the effect of shortening the navigation season on the lower reaches of the stream by preventing the free run of ice.
5. That there are other waterway projects, wholly within Canadian territory, which are waiting and from which greater benefits would flow.
6. That Canada is now so heavily involved in other public enterprises that her financial condition does not warrant her entering upon this billion-dollar undertaking.

FROM REPORT OF THE NEW YORK STATE COMMISSION

THE WATER POWERS OF THE ST. LAWRENCE ARE THE NATURAL RESOURCES OF THE PROVINCES OF QUEBEC AND ONTARIO AND OF THE STATE OF NEW YORK AND PROPERTY RIGHTS, WHICH CANNOT BE TAKEN WITHOUT COMPENSATION BEING MADE THEREFOR.

The Provinces of Quebec and Ontario have not ceded their rights in the waters of the St. Lawrence nor in the lands under such waters in aid of navigation to the Dominion Government, and they and the proprietors of such riparian rights will undoubtedly assert their claim thereto in the event of the

Dominion Government undertaking to deprive such provinces and the riparian owners therein of their riparian property rights. Certainly the State of New York will not voluntarily surrender to the United States without contest its sovereign control of and proprietary or other rights in and to the lands under the waters of the St. Lawrence south of the International Boundary Line, as well as in and to the water powers themselves on the plea of the proponents of the St. Lawrence project that the entire voluminous flow of 241 thousand cubic feet per second of the St. Lawrence river is necessary to feed a canal in Canada to be navigated by vessels of 25 or 30 feet draft, when only an inappreciable amount of water is now used to feed Canadian canals of 14 feet depth. That plea is so supposititious, that it is hardly conceivable that the United States Government will suffer itself to be induced to undertake to deprive the State of New York and its proprietary owners of their vested rights in the St. Lawrence river, any more than it would suffer itself to be induced to undertake to deprive unlawfully the states of Pennsylvania and West Virginia of their coal mines or the state of Michigan of its copper deposits.

The water powers of the St. Lawrence south of the International Boundary Line are some of the natural resources of the state, quite as much as are the coal deposits and other minerals the natural resources of other states.

Such water rights have been recognized as property rights from the time of the Magna Charta, and under the decisions of the U.S. Supreme Court, as well as under the moral law, they belong to the state of New York, subject only to the right of the Federal Government to interfere with their enjoyment so far as it may be necessary under the commerce clause of the Constitution to take them in aid of navigation.

THE ST. LAWRENCE PROJECT BELIEVED TO BE PRIMARILY A SCHEME TO DEVELOP POWER.

Under the plans of the International Joint Commission for the construction of a side canal opposite the Long Sault rapids, it cannot be successfully maintained that all such waters are necessary to aid navigation. It must be apparent to all that the project is primarily a scheme to develop power, which the United States has no constitutional authority to do.

It is apparent from the report that the attention of the Commission was centred upon the project as a scheme to

develop power quite as much as one to promote commerce. It has even been asserted that the development of power was the primary purpose of the project, and that accounts for the activity of the representatives of large power interests at the various hearings before the International Joint Commission.

CANADIANS FEAR INTERNATIONAL COMPLICATIONS

Canadians from Nova Scotia to British Columbia are awakening to a realization of the serious international, national and commercial problems involved in the joint construction, operation and control of the St. Lawrence waterway, nine-tenths of which is wholly within the Dominion of Canada.

In the proposed joint undertaking they see difficulties and chances for serious differences of opinion between the two nations and possible international complications that are grounds for opposition thereto. Now that the report is before the Dominion Parliament they are studying its content and recommendations. Apparently the more they do so the less they are inclined to favor it. Such provinces as Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba, Saskatchewan, Alberta and British Columbia, with their rivers and harbors and ocean commerce and with their enormous undeveloped water powers, wholly within provincial control, are not interested in the St. Lawrence development, which will place under joint control of the two nations and beyond sole provincial and beyond Dominion control the water powers of the St. Lawrence, which are the natural resources of Ontario and Quebec, merely to promote a navigation scheme that will be of no commercial value whatever to those eight provinces, even though it were of some economic value to Ontario, which is by no means conceded.

AGAINST INTERNATIONALIZATION

The people of Canada resent particularly that part of the Commission's recommendation with regard to the Welland Canal—that it be internationalized along with the St. Lawrence. "This is a suggestion which public opinion in this country will be slow to sanction," says the *Montreal Gazette*. "The Welland Canal is purely Canadian, is being constructed wholly in Canadian territory, and in the interests of Canadian transportation. It is in no sense international, and no attempt to make it so can be regarded as other than objectionable and

dangerous. It is remote from the proposed St. Lawrence waterway and is governed by none of the conditions which are being invoked in support of the internationalization of the latter."

"Would the American people consent to the internationalizing of the Mississippi River?" a Shipping Federation member asked the *News* man. "And how about the Panama Canal? You have the free use of the existing Canadian canals. You are on perfect equality with Canadian vessel owners, yet you propose to give preference to American ships in the matter of Panama tolls. If such a proposal as this for the St. Lawrence were advanced with regard to an American waterway, a country-wide protest would sweep in on Washington. We are good friends, and we wish to be generous, but to internationalize the St. Lawrence—that is asking too much."

GEORGIAN BAY ROUTE PROPOSED

More than that, Canada has had in mind for several years the construction of another waterway, one for which final plans have been made and one which lies wholly within Canadian territory—a project that is generally conceded to be feasible to establish proper and adequate connection with the Great Lakes. This is the Georgian Bay route—from Lake Huron to the St. Lawrence by way of the Ottawa River. Not only would that meet every requirement of transportation in the opinion of shipping men, but along with it would go power development, which, it is believed, would be sufficient to supply the "white coal" needs of Eastern Canada for a century to come. This power is on the Ottawa river and its tributary streams. The cost of the work would be only a fraction of the cost of the St. Lawrence project, so engineers of recognized worth declare.

POWER IN ABUNDANCE

The potential of the Ottawa is 1,000,000 horse-power. Then, the tributaries of this stream—the Rouge, the Lievre, the North, the Gatineau, the Coulonge, the Black and the Des Moines—would yield another million horse-power. More than that, the cost of developing power along this route would be less than half the cost of developments on the St. Lawrence.

"The United States interest," said the Federation's expert, "centres in the power at the Long Sault, where an American company has already expended \$2,000,000 or

\$3,000,000 in acquiring land. On the Ontario side there is only a strip 20 or 30 miles in width, from Cornwall to Brockville, which can be more easily supplied with power from the Ottawa River, and every foot of this strip is at a distance of from 25 to 70 miles from important sources of power on the Ottawa, any or all of which can be developed more cheaply than the Long Sault power—and are free from international problems. No industry of any consequence in this territory either obtains its raw material or markets its product locally."

Canadians wish to be able to develop, regulate and control their water powers as they see fit in the interest of Canadian industry and commerce. That is one reason the Georgian Bay route appeals so strongly to them.

CHAMBRE DE COMMERCE DE MONTREAL

A final report condemning the scheme for an ocean ship channel to the Great Lakes was presented to the Chambre de Commerce by its Transportation and Georgian Bay Canal committees, and unanimously adopted by that body at a meeting yesterday afternoon. The report followed special study by these committees after a conference between representatives of the Shipping Federation and the members of the Chamber.

The report, adopted in the form of a resolution, read: "Whereas the deepening of the St. Lawrence would be to the advantage of the United States, and to the detriment of Canada:

"Whereas the deepening of the St. Lawrence in co-operation with the United States would mean the gradual absorption of the weaker by the stronger partner;

"Whereas the project of constructing between Lake Ontario and Montreal, a waterway on the St. Lawrence River having a depth of 25 feet, and to erect at the Long Sault a power house having a capacity of 1,464,000 h.p. at an estimated capital cost of \$252,728,200, and a maintenance cost of \$2,562,000 a year is economically unsound;

"Whereas it would not be commercially practical for ocean going vessels to trade between Montreal and the Great Lake ports in competition with the lake freighters. The fixed charges and operating expenses on the lake boats are so much smaller than on the trans-Atlantic steamers, that even counting the trans-shipping charges, the lake boats could handle the traffic above Montreal at a cheaper rate than the ocean going boats. The lake boats, on the other hand, on account of their light construction, are entirely unsuited for ocean trade.

"Whereas the estimates do not include the interest during construction, nor the cost of deepening the harbors of the Great Lakes and the rivers connecting the lakes;

"Whereas to the estimate of maintenance costs, \$2,562,000 should be added, the maintenance cost on the Welland Canal and the fixed charges on the whole capital expenditure. No mention of these fixed charges is made in the report and on the Lake Ontario-Montreal division alone they should amount to over \$20,000,000 a year;

Prefer Ottawa Route

"Whereas no evidence has been submitted to the Chambre de Commerce demonstrating that the probable traffic requirements were such as to justify the enormous expenditure required to provide 25 feet navigation from Fort William to Montreal. Besides, if a deeper waterway were required, preference should be given to the Ottawa route which has the advantage of being shorter and of being entirely Canadian territory:"

"Whereas the quantity of power which it is proposed to generate at the Long Sault, viz: 1,464,000 h.p., is just about equal to the total water powers developed in the States of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, New Jersey and Pennsylvania, or to the water powers developed in the Province of Ontario and Quebec.

"Whereas there is no demand for this amount of power in Canada and the danger is that the power once exported into the United States would be lost to Canada.

"Whereas Canada has no interest in the international development of the power on the St. Lawrence River. She owns 80% of the total power available between Lake Ontario and Montreal and over 60% of this is entirely in Canadian territory. There are besides about 1,000,000 h.p. on the Ottawa River, making a total of 3,500,000 h.p. entirely in Canadian territory which can be developed, if necessary, to serve the territory in Ontario and in Quebec which would be served by the proposed Long Sault development.

"Therefore, the Chambre de Commerce is opposed to the deepening of the St. Lawrence and wishes to reiterate its position that if it is necessary to link Montreal with the Great Lakes by a maritime canal, the Georgian Bay Canal would best serve the interests of Canada." (Nov. 9, 1921)

MONTREAL HARBOUR COMMISSIONERS REPORT 1920

"The Commissioners are of the opinion that it is desirable to improve the present St. Lawrence Canal System **or other Waterway** to the extent of facilitating the larger lake boats' access to the Port of Montreal. They are of the opinion that such improvement should not extend beyond a fair margin of draft for such vessels.

They are of opinion that the type of vessel suitable for lake traffic is not suitable for ocean traffic, and that the ocean type of vessel, on the other hand, would not be able to compete with the lake vessels on inland service.

No detrimental arrangement should be made with the United States due to their commanding ready financial resources. That would give them a preponderant advantage either in control or distribution of Hydro Power for the development of their industries to the detriment of Canada.

In other words, Canada should not sell its birthright for a Mess of Pottage."

RECOMMENDATIONS OF THE INTERNATIONAL JOINT COMMISSION

"(1) That the government of the United States and Canada enter into an agreement by way of treaty for a scheme of improvement of the St. Lawrence river between Montreal and Lake Ontario.

"(2) That the new Welland Ship canal be embodied in said scheme and treated as a part thereof.

"(3) That the proposed works between Montreal and Lake Ontario be based upon the report of the engineering board accompanying this report, but that before any final decision is reached the report of the board, together with such comments, criticisms, and alternative plans as have been filed with the Commission be referred back to the board enlarged by other leading members of the engineering profession, to the end that the whole question be given that further and complete study that its magnitude and importance demand, and that after completion the administrative features of the improvement be carried out as set forth in recommendations 7 and 8 hereof.

"(4) That there shall be an exhaustive investigation of the extent and character of the damage through flowage involved in the plan of development finally adopted.

"(5) That, assuming the adoption of the plans of the engineering board, or of other plans also involving a readjustment of the international boundary, in order to bring each of the power houses on its own side of the boundary, appropriate steps be taken to transfer to one country or the other, as the case may be, the slight acreage of submerged land involved.

"(6) That Canada proceed with the works necessary for the completion of said New Welland Ship Canal in accordance with the plans already decided upon by that country.

"(7) That such 'navigation works' as do not lie wholly within one country or are not capable of economic and efficient construction, maintenance, and operation within one country as complete and independent units, be maintained and operated by a board hereinafter called the international board, on which each country shall have equal representation.

"(8) That such 'navigation works' as lie wholly within one country and are capable of economic and efficient construction, maintenance, and operation by the country in which they are located with the right of inspection by the said international board to insure economy and efficiency.

"(9) That 'power works' be built, installed and operated by and at the expense of the country in which they are located.

"(10) That, except as set forth in recommendation (11), the cost of all 'navigation works' be apportioned between the two countries on the basis of the benefits each will receive from the new waterway: Provided, That during the period ending five years after completion of the works—and to be known as the construction period—the ratio fixing the amount chargeable to each country shall be determined upon certain known factors, such as the developed resources and foreign and coastwise trade of each country within the territory economically tributary to the proposed waterway, and that that ratio shall be adjusted every five years thereafter and based upon the freight tonnage of each country actually using the waterway during the previous five-year period.

"(11) That the cost of 'navigation works' for the combined use of navigation and power over and above the cost of works necessary for navigation alone should be apportioned equally between the two countries."

EXTRACTS FROM CORRESPONDENCE BETWEEN THE UNITED
STATES GOVERNMENT AND THE GOVERNMENT OF CANADA

BRITISH EMBASSY,

WASHINGTON, D.C., May 18, 1922.

No. 127

MY LORD,—I have the honour to transmit herewith, for the information of Your Excellency's Ministers, copy of a note dated May 17 which I have received from the Secretary of State, containing certain suggestions with reference to the report of the International Joint Commission with respect to the St. Lawrence River improvement scheme.

I understand from the State Department that the President is anxious to make public at the earliest possible moment a short statement to the effect that the United States Government have raised this question officially with the Government of the Dominion. I should, therefore, be glad if Your Excellency would inform me by telegram as soon as possible after the receipt of this despatch whether the Canadian Government have any objection to the publication of a statement to this effect. In making this announcement the United States Government do not propose nor desire to enter into any details as to the suggestions now communicated.

I have to add that I have received a lengthy despatch from His Majesty's Consul General at Chicago on the subject of the St. Lawrence River improvement, copies of which will be transmitted to Your Excellency as soon as they can be prepared.

I have the honour to be, My Lord,

Your Excellency's most obedient, humble servant,

(Sd.) A. C. GEDDES.

His Excellency

The LORD BYNG OF VIMY, G.C.B.,
etc., etc., etc.,

Governor General of Canada,

Ottawa, Canada.

DEPARTMENT OF STATE, WASHINGTON, MAY 17, 1922.

"I am authorized by the President to state that he favors the negotiation of a treaty to be framed on the basis of the report of the Joint Commission, or such modification as might be agreed upon, and I should be glad to be informed whether the appropriate British and Canadian authorities are disposed to undertake the negotiation of such a treaty.

"I venture further to suggest that, if it should not be deemed desirable to formulate in the first instance a treaty embracing a complete plan for the execution and financing of the project, it might be practicable to conclude a treaty, pledging the two governments to undertake the execution of the project on the basis of the recommendations submitted by the International Joint Commission, or such modifications as may be agreed upon and making provision for a joint commission charged with the duty of formulating such a complete plan, which should be subject to the approval of the two governments prior to the beginning of the work of construction."

(Signed) CHARLES E. HUGHES.

His Excellency

The Right Honourable

SIR AUCKLAND GEDDES, K.C.B.,
Ambassador of Great Britain.

P.C. 1142

CERTIFIED copy of a Report of the Committee of the Privy Council,
approved by His Excellency the Governor General on the 29th May,
1922.

The Committee of the Privy Council have had before them a report dated 26th May, 1922, from the Honourable the Secretary of State for External Affairs, to whom was referred a despatch, dated 18th May, 1922, from His Majesty's Ambassador at Washington, transmitting a copy of a note dated 17th May from the United States Secretary of State to the effect that the President of the United States favours the negotiations of a treaty to be framed on the basis of the Report of the International Joint Commission on the subject of the improvement of the St. Lawrence River between Lake Ontario and Montreal for navigation and for the development of water power.

The Minister represents, in connection therewith, that Your Excellency's advisers have not thus far had opportunity to give to the Report of the International Joint Commission and the accompanying Report of the Board of Engineers appointed to examine the subject, that careful consideration which their importance merits, and that moreover, having regard to the magnitude of the project and the very large outlay of public money involved, the Government is of opinion that it would not appear expedient to deal with this matter at the present time.

The Minister further represents that the Canadian Government have no objection to the publication of a statement as proposed by the President to the effect that the United States Government have raised this question officially with them.

The Committee concur in the foregoing and advise that Your Excellency may be pleased to transmit the substance of this minute, by telegraph, to His Majesty's Ambassador at Washington for communication of its purport to the United States Government.

All of which is respectfully submitted for Your Excellency's approval

RODOLPHE BOUDREAU,
Clerk of the Privy Council.

**OPINIONS FROM COMMERCIAL BODIES—
PUBLIC MEN AND THE “PRESS”**

Le Canada:

Nous ne pouvons, sans danger, accepter de devenir les partenaires d'un puissant voisin, dans cette entreprise; tôt ou tard, nous y serons fatallement écrasés, comme nous l'avons été pour le Maine ou l'Alaska.

Déjà les politiciens américains ont “entrevu” que ce projet pourrait assurer dans l'avenir la rive sud de Québec aux Etats-Unis; d'autres s'opposent au projet, chez nos voisins, parce que, disent-ils, “la part des Etats-Unis ne serait pas assez prépondérante.” De là à ce qu'elle le devienne, il n'y aurait qu'un pas.

Non! n'allons pas, pour des avantages illusoires, sacrifier notre autonomie et exposer notre patrimoine.

D. P. Kingsley, President Chamber of Commerce, New York:

We oppose the St. Lawrence River project, not because it will injure this port, but because it will place on an already over-burdened people greatly added burdens in an experiment, which when all is said, is largely sentimental, and will ultimately involve us in grave international complications.

Buffalo Express:

Canada's national debt is mounting toward the \$2,500,000 000 mark. The Dominion Government cannot afford to shoulder further obligations of \$250,000,000 for a canal while the Grand Trunk system and the lines previously acquired by the Government continue to pile up deficits. Canada has ample rail facilities for its needs for many years to come. Can it be possible that great sums would be spent in building a canal system designedly to draw traffic from the railways, even if the United States agrees to bear half the burden?

Le Soleil:

The project to deepen the channel of the St. Lawrence from the Great Lakes to Montreal would be a means whereby the United States could appropriate that great waterway to its own advantage. The execution of the plan would involve an expenditure of more than three hundred million dollars, of which Canada would be called upon to pay one-half. The enterprise is one best adjourned. The period during which we are forced to practice economy and abstain from executing public works which are needed at home is no time to be called upon to expend millions of dollars for the benefit of inordinately rich neighbours.

La Presse:

La commission recommande aux gouvernements des Etats-Unis et du Canada d'entrer en négociations pour la conclusion d'un traité qui accorderait aux Américains un contrôle conjoint avec les Canadiens sur un territoire entièrement canadien. Nous ne serions donc plus indépendants des Américains dans un territoire qui nous appartient exclusivement. Qu'en résulterait-il? Beaucoup de périls pour nous, assurément.

En 1903, alors qu'il était question de la construction d'un chemin de fer pour le gouvernement canadien, il fut suggéré de faire passer le nouveau chemin de fer entre la province de Québec et le Nouveau-Brunswick, à travers le Maine. Sir Wilfrid Laurier, qui était alors premier ministre, repoussa vivement cette idée et déclara:

"J'ai trouvé que la meilleure manière, la plus efficace, de conserver l'amitié avec nos voisins américains, c'est d'être absolument indépendants d'eux."

Si le projet de canalisation est réalisé, les canaux actuels du St-Laurent, qui nous appartiennent, disparaîtront et feront place à un système international contrôlé par les Américains et par nous, mais le canal américain de l'Erié continuera à exister. *Il se trouvera alors qu'il n'y aura plus de canaux entièrement canadiens permettant des communications entre les grands lacs et l'Océan, mais que les Américains auront leur canal faisant communiquer les grands lacs avec l'Atlantique par le port de New York.*

Si des embarras se produisent sur le système international projeté, si des complications surgissent, les Etats-Unis seront indépendants de ce système, puisqu'ils pourront faire passer le fret venant des grands lacs par le canal de l'Erié, qui leur appartient, jusqu'à New York. Mais, que ferons-nous alors? où seront nos moyens de lutter, puisque nous n'aurons plus de canaux nous appartenant en entier?

Nous aurions perdu tous nos avantages, et les Américains en auraient acquis de nouveaux. Mais il serait alors trop tard pour méditer les sages paroles de Sir Wilfrid Laurier.

Regina Board of Trade:

"It seems inadvisable to this committee to recommend to the full board the approval of this scheme at present as a general national project, there not being sufficient general demand on the part of Canada for the undertaking, and an indefiniteness of the whole plan and an uncertainty as to the cost."—(*Montreal Herald* 9, 1, 23.)

Le Soleil:

"We are in unison with the whole Province of Quebec on this question and are opposed to this enterprise because it would place into the hands of strangers one of the greatest sources of national wealth. We hope—indeed we are convinced, that the Dominion Government, which studies questions of this kind from the national point of view, and not from the provincial or regional point of view, will maintain the reserved attitude adopted last year. It will not pull the chestnuts out of the fire for anybody, if our national interests are in peril."

A. A. Wright, Honorary President Dominion Marine Association:

"From the standpoint of navigation only, it would be criminal folly to spend say \$250,000,000 enlarging canals on top of probably \$75,000,000 being expended on the Welland Canal. Forgetting the money being wasted on the Welland as that is under way, the interest on \$250,000,000 at 6 per cent., or \$15,000,000, would pay the freight annually on 250,000,000 bushels of grain from Port Colborne to Montreal at 6 cents per bushel, and with facilities to give the same unloading at Montreal which ships can get at the Government elevator at Port Colborne, grain could be carried at that rate more profitably than it is being carried now—so that, to justify the expenditure for navigation purposes only, you would require to get grain carried in the enlarged canals for nothing. In view of the foregoing it would be interesting to learn how the enlarging of the St. Lawrence canals would help the present situation, or take care of the future."

Henry Holgate, C. E.

In an address before the St. James Literary Society, reported in the *Gazette* of Oct. 18, 1922, Mr. Holgate announced that six or seven years ago he had been an advocate of the waterway, but after study, was a convert to the opposite view. From an engineering point of view purely the damming of the St. Lawrence was a tremendous one, an engineering problem never known before in the world, and this could be realized when it was considered that in building it would be necessary to take care of 260,000 cubic feet of water per second. Never had hydraulic engineering approached such a task. The building of the Panama Canal was comparatively easy. The engineers of the Commission in getting only one year in which to study the project had not been given a fair chance and further study was required. He considered the estimates made by the engineers would be greatly exceeded. The traffic did not justify such a project. Ocean vessels could not compete economically on the route, and would not use the proposed waterway to any great extent. The present canals were capable of taking care of a great deal more business than was now available, or might be for a long time, and present financial conditions made the project ridiculous.

Senator Lynch Staunton:

In September last a debate was held at Hamilton between J. H. Duthie, Secretary of the National Waterways Association of Canada and Senator Lynch-Staunton. Among others things Senator Lynch-Staunton said as follows:

"The lake ports along the Province of Ontario, according to the report of, the Commission, are the only places that favor the project. The farmers don't want it, and all the rest of Canada is either hostile or indifferent. The West does not want it—Quebec does not want it—Nova Scotia does not want it—in fact it hasn't any more chance than a certain class of goods in a certain place."

He pointed out that the waterway project was designed to give cheaper transportation by taking business away from the railroads. The backbone of the railroad business was transportation of grain. Last year 138,000,000 bushels were brought out of the West. If that were taken away from the railroads, it would mean an additional burden to the taxpayers of \$30,000,-000 in railway deficits.

"Now let us see what this project is going to do for Hamilton. We now have the great Welland Canal. Big vessels from the West take anything we like. Where else do we send our products? Not across the ocean, for I understand that what we send across the sea doesn't amount to a hill of beans. Notwithstanding the fact that incoming freight could be brought to Hamilton cheaper by boat, 90 per cent. of it came by rail."

Speaking of the possibility of ocean-going vessels taking grain from the lake head, he said that it would take 94 vessels each making five trips to the West to bring out the grain, or over 400 trips. Each vessel would cost about \$1,000,000. These vessels could not make expenses unless the trip up the lakes were with full cargo. According to records of the Welland Canal only 98,000 tons of package freight went up to the Great Lakes. It was cheaper even now to ship by water than by rail, and so it was reasonable to suppose that no more would go up the Lakes under the deep waterway scheme. The 94 boats would only be able to make 11 full cargo trips to Port Arthur, and the remainder of the 400 would be with empty holds.

"What we need is facts not fancies, well ordered judgment, in order that the nation's money should be spent judiciously. The scheme means increasing the burden of taxation for a fantastical dream. I challenge any man to prove that Hamilton or Toronto would benefit one dollar from the project."

"As an engineering proposition we don't know anything about the cost. The engineers figured it out, and the Commission says the time was inadequate, and before acting the scheme should be submitted to a new board composed of the best engineers in America. It is said that the project will cost \$400,000,000. Hugh Cooper, the famous New York engineer says it will cost nearer \$1,400,000,000.

No wonder the Commission said, "Before you put your foot in the trap find out how strong the spring is."

He pointed out that the promoters were requesting co-operation with the United States in the development of a million and a half horse-power of water-power. While Canada would require no such amount for many years to come, if it were developed the United States would demand it, and this would entail a tremendous loss to Canada.

Three million horse-power could be developed in the Ottawa valley and used exclusively in Canada to provide electrical competition with the United States. "Let us develop electrical power in the valley of the Ottawa. If we consider Canada we will not develop for the United States."

"It is unwise to enter into partnership with the United States. The proposition is this—to give the United States a proprietary interest in the Welland Canal: to part with part of our territory to Uncle Sam: to give the United States Government proprietary rights to it and to the great St. Lawrence. No nation in history has ever done such a thing. To prevent such a step Great Britain bought the Suez Canal outright. When we built the Welland Canal we did it ourselves, and we should not develop it and the St. Lawrence until we need it and can afford it. It would be unspeakable folly to sacrifice our territorial rights in order to get Americans to pay half the cost of this canal which we do not need."

Buffalo Evening News, Feb. 1, 1922:

Soon after the United States Supreme Court decided against the Aluminum Trust organization the propaganda for the St. Lawrence Ship Canal project was started. But the Trust did not appear in the open; it kept well in the background. It waited until the move was well under way—until the Middle West had forced the question on the International Joint Commission. And let it not be forgotten that the instructions to the commission were specific as to the St. Lawrence. It was not told to fix upon the best possible route, but merely to say what works would be necessary to make the St. Lawrence navigable for ocean going vessels. There may be other routes but they could not be considered. Wittingly or unwittingly the instructions were drawn to the perfect measure of the Aluminum Trust's design. And the commission's report calls for the principal power development at the Long Sault, where the Trust has its holdings.

When the propaganda was well advanced the Aluminum Trust, which had taken the General Electric and the du Ponts into partnership, came into the field. It made its appearance as the Frontier Foundation. Two applications for preliminary permits on the St. Lawrence were filed by the Trust, one in the name of the Louisville Power Corporation asking

1,200,000 H.P., the other in the name of the St. Lawrence Transmission Company asking 1,400,000 H.P.—together 2,600,000 H.P., a more generous allowance than they would have had under the old Long Sault charter. The permits sought were granted by the State Water Power Commission on December 15, 1921.

At the present time all the interests of the Louisville Power Corporation and of the St. Lawrence Power Co. are merged in the Frontier corporation. It is the old crowd in the saddle again—the old crowd with the Great Lakes-Tidewater Association in its support. The plan of this combination of interests is to get control of all the large water powers of the State—first of the Niagara and St. Lawrence powers. Their biggest play at present is on the St. Lawrence River.

Governor Nathan Miller of New York:

I oppose the St. Lawrence project because I believe that it involves an unwarranted expenditure of public money.

While I suppose some logrolling in river and harbour appropriations is inevitable, I trust that the time has not yet come when the trading of support for local improvements can commit the treasury to a vast project for the improvement of a waterway in another country regardless of its merits.

The engineers have reported that it will cost \$252,728,200 to construct a 25-foot canal and one dam to develop 1,464,000 H.P., and that at a further cost of \$17,986,180 the canal can be deepened to 30 feet. To illustrate the sort of propaganda that is being carried on, that \$250,000,000 has been heralded over the country as the cost of the entire project, including the development of 4,000,000 H.P. which is held out as an alluring bait to the New England states.

No estimates have been made of the cost of deepening the channels of the Great Lakes and the connecting rivers, and no such estimates have been called for. The Army Engineers have repeatedly reported that the benefits to commerce from deepening those channels will be incommensurate with the great cost involved.

The proponents of the project evidently realize that the argument against committing the Federal treasury to it at this time is unanswerable, and so the suggestion is now made that it can be financed in another way. That brings to the surface one of the most powerful though unseen forces back of the project. It is suggested that a corporation can be formed to finance the project whose securities can be amortized over a period of years from the sales of water power.

An active propaganda is now being conducted through the New England states to persuade them of the benefit to be derived from accessibility to hydro-electric power, but they are not being told that they are to be called upon to foot the bill not only for the development of that power, but for the construction of a ship canal. I am bound to say that the audacity of the proposal is only equalled by the imagination of those who are seeking to convince the country that ocean-going vessels will navigate an inland waterway more than 2000 miles long with hundreds of miles of restricted channels and locks necessary to overcome an elevation of more than 600 feet. Of course our friends can indulge their flights of imagination without risk if they can make the power users of New York and New England pay the price.

Laying aside the cost of deepening lake channels and harbours, we have an expenditure of \$300,000,000 by both governments—and no one in his senses, after reading the report of the engineers would put the initial cost at less than that—to be financed from 1,400,000 horse-power—more than \$220 per H.P.

I doubt very much that the power interests will be anxious to grab that proposition unless they can grab with it the right to develop and control the other potential 2,600,000 H.P. wholly within Canadian waters. And whilst the middle western states appear to be unselfish enough to surrender to the power interest the water powers of New York. *I do not believe that Canada will thus surrender her great power rights even though she has no immediate use for them.*

They (the middle Western states) dream of seeing ocean steamers loading or discharging cargo at the lake docks from or destined to all the ports of the world. Two theoretical experts (MacElwee and Ritter) have been employed to write a book to prove that this is a true vision and not a mirage. I undertake to say that no practical steamship operator either on the Great Lakes or the sea can be found who will say that it is commercially feasible. The engineers who have made the preliminary report could not have considered it feasible, else why did they recommend only a 25-foot canal as the initial project when for only \$17,000,000 more a 30-foot canal could be constructed? The fact is that no unprejudiced person competent to speak believes that ocean-going vessels will ever navigate such a waterway. A 25-foot channel would accommodate vessels of not more than 23-foot draft. Lake vessels with their flat bottoms and special design have a capacity of 14,000 tons with a draft which the present lake channels can accommodate. But ocean-going vessels with their different keels would be limited to a capacity of not more than 4,000 tons by the 25-foot channel. There are barges navigating the Barge canal to-day with half that capacity.

The truth is that the leaders of the movement know that it is necessary to throw the glamor of a deep sea canal about the project to give it momentum. Without that even the middle western States would lose interest. The authors of the book, which is a part of the insidious propaganda now being spread over the country show their knowledge of its impracticability by their desperate effort to prove that the hundreds of miles of restricted waters and the locks necessary for a lift of 600 feet are really negligible and that, after all, the tendency is to build smaller ocean vessels with lighter draft.

The plain facts should arrest the flight of imagination even of our friends of the middle west. They certainly should arrest the attention of the rest of the country to the criminal foolishness of wasting hundreds of millions of dollars sadly needed for other improvements in the attempt to realize an impossible dream.

Abnormal conditions have given the impetus to the movement back of this project. The middle west has suffered from these conditions the same as we have all suffered, but the times should admonish us that it is wise first of all to look about us and to utilize to their maximum the means ready at hand without waiting a decade for relief and without embarking upon a program of expenditure to still further add to the burden under which industry is now staggering.

New York State Commission:

Canada has an interior system of waterways greatly in need of improvement. For years the Ottawa River and connecting waterways have

been awaiting funds for improvement. In the United States there are several thousand miles of waterways and scores of harbours awaiting appropriations to carry forward improvements that have been approved, and which are necessary to relieve railway traffic conditions.

Must all such improvements be further delayed for lack of appropriations while millions are expended in a joint undertaking by the two governments in the construction of a ship canal down the St. Lawrence, a project which has been repeatedly disapproved by commissions and expert authorities in the United States?

For a hundred years the two nations have been in perfect accord and no thoughtful person would ever suggest that these cordial relations should ever be severed, but as a matter of prudence and good statesmanship, if a ship canal were ever to be built down the St. Lawrence River, and for nine-tenths of the distance from Lake Ontario to the Gulf of St. Lawrence wholly within Canadian territory and under the sovereign control of the Dominion of Canada, then there should be a cession of territory the entire length of the St. Lawrence River, five or ten miles back from the river, constituting a zone like the Panama Canal Zone, or like the zone recently established by allied powers along the Bosphorus. Such zone should be neutral territory or under the joint sovereign control of both nations.

Hon. John H. Small:

"As President of the National Rivers and Harbors Congress, which has a policy and not a project in view, you can see it would not be wise for me to take a partisan position upon this matter. But I may be pardoned, without charge of personal bias, in making this one statement: We are told the man who does not first provide for his own household is worse than an infidel, so that nation which does not first provide for its own interior waterways and build up its own terminals and country, is not seeking and following the way of good citizens in the development of the country."

Colonel W. I. Gear:

Colonel William I. Gear, vice-president of the Robert Reford Company, Ltd., agents of the Cunard, the Anchor, the Donaldson and the Donaldson-Thompson lines, who has been interested in deep-sea shipping for fifty years, in conversation with the *News* man, expressed the opinion that it would be dangerous to interfere with the flow of the St. Lawrence by building such dams, canals and other works as the International Joint Commission recommends. "The action of the ice in the spring of the year is an unknown quantity," he said. "Nature has made the channels, and we believe that any interference with the flow as we have it now would interfere with the flow of water between Montreal and the ocean. Though deeper canals might be made to suit the whim of a certain section of the North American continent, they might find that they had failed in their object, as they had so seriously interfered with the water below the Lachine Rapids."

"Ocean steamers will not go up the canals on account of their excessive cost," Colonel Gear told the *News* man. "Lake steamers are more economical for use in canals, for the reason that ocean vessels are so costly that they must be kept at sea as long as possible, in port as short a time as possible. To proceed west from Montreal would mean employment of great capital at the maximum of expense, at an average speed of about four knots an hour, while, when at sea, steamers proceed at full speed. The cheapest means of transportation is the use of canals by lake vessels and the transfer of cargo at the seaport."

"The opinion of those in favor of the canal, that ocean vessels, if they do use the canal, would call at the various ports for cargo, is economically unsound from a commercial standpoint. It is well known in commerce that steamers will not go to two ports, if it is practicable to load and discharge them at one, so that such ports as Toronto and other Canadian and United States ports would never get the vessels, goods would still have to be handled by rail or water to the seaport, where they would be loaded on such vessels as made the seaport their terminus."

"Bear this in mind, any deviation from the accustomed course of a vessel means additional expense. If we have a vessel loading here for London, and a shipper has a consignment of goods that he wishes us to load on it for Liverpool, there are many things that we must take into account. The deviation means two days added to the steamer's time. Then, there are pilotage charges, port charges, wharf charges and a number of other details, all running money."

"Now if a ship were loaded at Chicago for overseas, and it had to stop at Detroit to take on automobiles, then stop at a Toronto to take on a shipment of provisions, costs would mount at a rapid rate, for there is a large crew to be fed, there is the heavy investment represented in the cost of the vessel to be considered. With every stop the steamer is spending, not making. Of course, the shipper has to pay the freight. And he would find it a heavy toll with ocean-going vessels."

"How about the cost of the St. Lawrence project?" Colonel Gear was asked.

"There seems to be a complete overlooking of the fact while canals would be deepened the harbors along the river and lakes would also have to be deepened," he replied, "otherwise vessels would not be able to use them. I think none of the harbors are over 20 feet and few of them that depth."

"In estimates for building the canals this item has not been thought of, or apparently not made much of. Nor has the cost of deepening the existing channels to 30 feet been considered. The depth that would be required would be 30 feet, as large vessels now building have a draft of 27 feet 6 inches to 30 feet and 30-foot draft, would at least require an additional 2 feet of water. The more water that is required the longer and deeper the channel has to be dredged and the greater the cost."

"And the general effect on the river—how about that?"

Colonel Gear, like all others who have given attention to the St. Lawrence project, sees the sinister hand of the Power Ring guiding it.

"The building of the canals is only a camouflage for the development of water power to satisfy the greed of some manufacturers," he remarked.

"As for Canada, financially, we are unable to bear the cost and will not be able for a number of years to come. The Canadian government should not enter into any alliance that will require the spending of any large amount of capital at this time."

"Further, we do not believe that internationally it is a wise move. Complications would be likely to arise, as it is hardly possible for the United States to expend large sums of money in Canada without having some understanding which it can be easily imagined, under certain conditions, might lead to trouble, unless the United States is prepared to contribute to the share of the cost and hand it over to Canada without any strings being tied to it."

Robert W. Reford, President of the Shipping Federation of Canada:

"From an economical point of view, it is improbable that the ocean-going vessels will ever make a practice of trading to ports on the Great Lakes no matter to what extent the canal systems west of Montreal are enlarged and deepened, as the cost of upkeep of ocean steamers, the delays proceeding through the channels and danger of damage would be too great to make it a revenue-paying proposition. When we read in speeches of such men as the secretary of the Illinois Manufacturers' Association that they will see deep-draught ocean liners from Seattle, Vancouver, San Francisco, Vladivostok, Yokahama and other oriental ports sailing up the St. Lawrence through the canals to Chicago, it almost makes one think they have lost their senses in the West. It is unsound economically; it is not possible."

Rev. Canon Scott, Quebec:

"The St. Lawrence, with the exception of about 100 miles, lies wholly in Canada. It is a gigantic asset of this country. But it is not merely a Canadian asset, it is an imperial one, and must be wholly under our control. At some future time the empire might be at war with a foreign power with which the United States was at peace, and it might be necessary for us to close the river by mines or in other ways. It is the very spinal marrow of Canada. The internationalizing of the St. Lawrence would cut us off both really and sentimentally from the lower provinces. The thing is unthinkable."

Joseph Quintal, Chambre de Commerce de Montreal:

Appearing before the International Joint Commission, Joseph Quintal, representing La Chambre de Commerce of Montreal, said: "It would not be wise for the Dominion of Canada to embark upon such an enormous expenditure for development of the Great Lakes and the St. Lawrence as outlined. We have been consistently in favor of the construction of the Georgian Bay Canal, which we believe from economic standpoints as well as purely Canadian interest should have preference over any project for a large expenditure of money on the enlargement of the St. Lawrence canals or the deepening of the river."

"We are already feeling keenly the competition of Buffalo, Oswego and other American ports. By the Georgian Bay route we could enlarge on the business that we are now doing. This canal would be more economical to maintain and manage than the proposed St. Lawrence improvements. There would be fewer locks on the Georgian Bay route, and there would be a saving of from two to four days as compared with the route proposed to the Commission."

Alfred Lambert, Chambre de Commerce de Montreal:

"We feel that we should not give any portion of our national territory or create any servitude or give any privileges to a combination composed of representatives of Americans and Canadians. We feel that it might cause in the future friction and issues which we should avoid at all times. We feel that Canada should control all it owns within its boundaries for the present and the future."

"The more we follow this question the more we understand it is the development of power rather than navigation that is the design."

R. M. Wilson:

R. M. Wilson, chief engineer of the Montreal Light, Heat and Power Company, told the Commission that the cost of developments on the St. Lawrence, along the lines proposed, would be so great that power would have to be sold at from \$60 to \$75 in the nearest markets. That would be more than the cost of coal-made electrical power. On the St. Maurice River, where 700,000 horse-power is available, the cost would be about one-third he said, of that on the larger stream. St. Lawrence developments could not stand competition with those in prospect on other nearby rivers.

"There is enough power in the St. Maurice River to supply this section of the country for 30 or 40 years," said Mr. Wilson, without taking the St. Lawrence into account at all."

Thomas Robb, Secretary, Shipping Federation of Canada:

"The reason to-day why steamers make their terminus at the various Atlantic ports, including Montreal, is on account of the unobstructed navigation. As soon as you have obstructed navigation, such as with canal locks, you immediately increase the cost of navigation. The delays in proceeding through the canals and danger of damage would be too great to make a revenue-paying proposition. No regard seems to be given to the fact that the cost of an ocean-going ship is treble the cost of a lake vessel. I know of no man in the United States or Canada familiar with conditions who for a moment thinks the St. Lawrence project would be feasible."

Montreal Gazette, March 9, 1922:

"International dealings call for clean-cut definition of rights and obligations, and absolute clarity of statement with regard to points even potentially controversial. Amicable relations rest on a secure basis only when grounded upon perfect mutual understanding."

"Judged by this criterion, the report of the commission is a lamentable failure as a foundation upon which to base an international treaty involving momentous issues. Its recommendations as to apportionment of cost of the undertaking, and as to maintenance and operation of the works, if adopted, must prove a fertile source of future misunderstandings."

"Recommendation 10 reads:—

"That, except as set forth in recommendation 11, the cost of all 'navigation works' be apportioned between the two countries on the

basis of the benefits each will receive from the new waterway; Provided, That during the period ending five years after completion of the works the ratio fixing the amount chargeable to each country shall be determined upon certain known factors, such as the developed resources and foreign coastwise trade of each country within the territory economically tributary to the proposed waterway, and that that ratio shall be adjusted every five years thereafter and based upon the freight tonnage of each country actually using the waterway during the previous five-year period."

"Recommendation 11 refers to power cost at the Long Sault only, and has no bearing on the general question.

"Could any more vague and indefinite scheme possibly be devised? The cost is to be apportioned on the basis of benefits which cannot be finally determined in the next fifty years. Meantime our liability under the treaty remains an unknown quantity, the 'X' in an equation the solution of which is to be a matter of international debate for half a century to come.

"True the commission offer a feeble and ineffective method of working out the problem by a series of adjustments every five years of the ratio to be paid by each country. For the first five years after completion, they say, the ratio is to be determined 'upon certain known factors,' etc.

"Here we have not only an indefinite statement, but a whole bundle of contentious questions rolled up together with troublesome points sticking out all round like the quills on a porcupine. Are the indicated factors all the factors? How and by whom are their bearing and relative importance to be fixed and converted into terms of dollars and cents to be paid by Canada?

"After the first five years of operation the commission proposes to cut the Gordian knot by basing the ratio 'upon the freight tonnage of each country actually using the waterway during the previous five year period.'

"This solution entirely ignores the fact that Canada already has a St. Lawrence waterway carrying a large tonnage, and which could easily accommodate double or treble the present traffic without a dollar of capital expenditure. This alone renders the proposition absolutely unfair to Canada. And although at first sight the proposal appears at least to offer a tangible basis of division of costs, nothing could be more highly deceptive. It not only plunges us in a bog of uncertainty, but actually provides for keeping us there as long as the proposed treaty shall last.

"Several things may happen. Assume, for example, that proponents of the project are right, and that the 43,000,000 people of the Western States who, the commission tell us, are 'fully equipped in every way to take full advantage of the waterway' direct a heavy traffic through it. What will Canada gain? Nine-tenths of the lake freighters are American. This great fleet will then come down the St. Lawrence to an American seaport sixty miles above Montreal. There they will meet ocean vessels of the United States mercantile marine which President Harding proposes to subsidize to the tune of \$30,000,000 a year. Not one ton of this traffic can be handled by Canadian carriers, nor will it produce a cent of revenue to the Dominion. Worse even than that. With the enormous advantage

given them on the Great Lakes end by the coasting laws and their predominance of tonnage and trade, and at the ocean end by heavily subsidized shipping, which will enjoy the free use of our costly ship channel below Montreal, they will be in a position to take away from Canadian ports the handling even of our own Northwest grain, which only the coasting laws hold now for our own carriers.

"Under those conditions, of course, the United States would bear most of the cost of the canals. And, naturally, what they pay for they will own and control, although nine-tenths of the works are on Canadian soil. We will thus get off cheap, but we will have sacrificed our national commerce, transportation interests and control of the St. Lawrence, and to a great extent our national independence. It would be simpler and lead to the same end in the long run to adopt Senator King's suggestion and at once hand over part of Quebec to the United States and let them assume the entire undertaking.

"On the other hand, the prophets may be wrong. United States traffic through the St. Lawrence canals has for years been a mere bagatelle. Last year large quantities of American corn and wheat were forced to the St. Lawrence route by a combination of circumstances which might not occur again in a lifetime. And even last year practically none of the Canadian new crop grain shipped from Fort William came to Montreal. In normal years, 60 per cent. of the Canadian wheat goes out via Buffalo.

"New York will not lose her trade without a struggle. Railway difficulties, largely a war heritage, which are now the chief cause of the anxiety of the Western States for the waterway, will find a solution. Lower rates on United States railroads—and it should not be forgotten that the New York Central has carried millions of bushels of grain at a rate of $2\frac{1}{2}$ mills per ton per mile—further development of the Erie Canal, or even a 25-foot competing waterway across New York State, might easily in a few years drain the St. Lawrence of American traffic. Herbert Hoover says that in ten years they will have no grain for export. Then we would pay the entire cost.

"These are the extremes. But who will undertake to say how far either of them is from the truth? We have already made one bad guess on the St. Lawrence. Our canals were deepened to 14 feet to capture American trade. They were a dismal failure in that respect.

"Apply the proposal of the Commission to ordinary business and its absurdity is clear.

"A' is a dry goods man on St. Catherine Street. He owns a lot on which he has a store. His neighbor 'B' who is his competitor in the same line, but who has ten times the capital and holds 'A's' promissory notes for large amount, says to him: 'Let's tear down your old store and build a million dollar block on your lot. We will both do business in it. If I beat you out and get the trade I'll pay for the building. If not, you'll pay for it.' 'A' might well say, 'Where would I get the million dollars?'—but he probably would use more vigorous Anglo-Saxon.

"On the subject of maintenance and operation it will suffice to say that under the recommendations of the report three distinct jurisdictions are to be established:

"1. The United States Government to maintain and operate locks on American soil;

"2. The Canadian Government to do the same in Canadian territory, and

"3. The 'International Board' to maintain works of an international character.

"Under the latter heading would fall only the works at the Long Sault. It so happens that only one lock is proposed to be located in United States territory. That is the little joker. Canada is to maintain and operate all the rest of the system, and that one lock puts the United States in virtual control of the whole route.

"It is to laugh.

"Montreal, March 3, 1922."

"CANADIAN."

Hon. George Clinton, former member of International Waterways Commission:

"It is very important in weighing the conclusions of the International Joint Commission to consider their sources of information (personally they had little or no knowledge of the subject), because their conclusions rest on general information. These sources are the report of the engineers, the MacElwee book and partisan statements of advocates at public meetings. I wish to say that statements made at public meetings, unless they come from unbiased persons, competent to understand the subject as to which they speak and having knowledge and training to make their opinions worth something, are of little or no value. I speak not only from general knowledge, but from actual experience on the International Waterways Commission. We held a number of public meetings in Canada and the United States at which very important questions were considered, and the information which we obtained, and the opinions which were entitled to any weight were few and far between; there were always two sides represented, and partisan statements which did not bear the test of our own investigations filled the air. We laid little or no stress on what the partisans said in advocacy of their view and regarded the public meetings as valuable only for the purpose of trying to test what people wanted, not what should be done. There were a few exceptions where competent engineers appeared and were able to furnish us with data which we could use, after investigation, to advantage; but we made our own investigations and based our conclusions on them, with the help of the data so furnished.

"The International Joint Commission, however, has relied upon the untested report of the engineers, the partisan book which I have discussed, that is worthless so far as furnishing data to test the questions here involved is concerned, and what was told them by various people at their public meetings.

"It would seem, therefore, that the foundations on which the report of the Commission rests are unstable and utterly insufficient to support the superstructure that they erected thereon. To be plain, I am most decidedly of the opinion, as I think all unbiased investigators must be, that the International Joint Commission has hurried its work and has been influenced more by the outcry said to be that of sixteen or eighteen states, than it would have been if it had fairly investigated, upon its own responsibility, by consultations with persons versed in the operation of trans-Atlantic steamships and conversant with world commerce and with navigation. So far as settling any of the questions which must be settled before any action is taken, the report has the nature of a set of conclusions carelessly arrived at and it is absolutely of no value.

"In examining the conclusions of the commissioners one thing is apparent and should be kept in mind; taken as a whole they show positively that the commissioners did not devote their time to proper investigation of the great basic principles on which the problems to be solved rest. They say in their report, substantially, that the report of the engineers is of such a nature that it cannot be relied upon, and they also disclose in their conclusions an utter disregard of the economic principles that should be applied to the problems before them and that are necessarily decisive, one way or the other, of the character of the answers they are called upon to give to the questions submitted to them.

"The commissioners also are at fault for hastening to recommend a treaty for the purpose of constructing the canal. Whether this is the result of bias or not is not ascertainable.

"The entire report shows that the engineers' plan is utterly insufficient to enable anyone to estimate the cost with any approximation. This cannot be done until the question is settled as to what draft will induce ocean-going vessels (if they can be induced) to engage in commerce upon the Great Lakes and between them and trans-Atlantic ports; the depths of the channels must be ascertained before engineers can prepare a satisfactory plan, and a satisfactory plan must be prepared before cost can be estimated. The commissioners say there is no satisfactory plan, and yet they urge the making of a treaty. To say the least, this makes the conclusions worthless."

Wm. H. Chandler, Boston Chamber of Commerce:

"It is claimed that the tonnage now handled on the lakes exceeds the tonnage of the combined movement through the Mediterranean and the Black Seas—granted that this is true. What is it? Where does it move? How much would be available for movement through the St. Lawrence?

"Of the millions of tons in round figures, 60 per cent. is iron ore from the head of the lakes to Lake Erie or Lake Michigan ports and 30 per cent. coal handled on the reverse direction. The most ardent supporter of the canal project would be compelled to admit that none of this tonnage would be affected by the construction of the canal. This tonnage is what makes it possible to operate boats so economically on the lakes—both directions loaded to capacity, modern handling devices and a quick turn around. But what about general cargo? When we come to examine the lake rates on this class of traffic, we are astonished to learn that with rates higher than ever before, the lake proportion on high class traffic approximating \$12 to \$15 per ton that the Great Lakes Transit Company found it unprofitable to engage in Lake Michigan traffic with Chicago, the New York of the West, as its western terminus. With the whole world to draw from through the Atlantic ports there apparently was not enough domestic or import traffic to encourage this line to continue in operation at rates lower than the lowest all-rail charge.

"It is also argued that this improvement would make possible the development of considerable coastwise commerce between New England and lake ports—that grain would be brought to Boston and New England merchandise taken West. Generally speaking, New England merchandise is high class traffic that demands with few exceptions prompt transportation. The rail and lake service from New England is regular and shipments are forwarded several times weekly between Buffalo and Georgian Bay ports on the one hand and the western lake terminal on the other. In order to compete with this service, it would be necessary to have not less than two sailings a week from Boston and these vessels could not be

expected to average more than ten knots an hour under economical operation, which would require ten days for the trip from Boston, to Duluth. It would, therefore, be necessary to have a fleet of at least twelve vessels in continuous service to make this service attractive to the New England manufacturer, and this would mean a very large investment for the ships alone. The eastbound cargo would be confined almost exclusively to grain and grain products.

"The amount of grain consumed in Boston is negligible when considered from the standpoint of steamship tonnage. In the year 1920 there were less than two million bushels of all kinds of domestic grain received at Boston. During the year 1919 the receipts were slightly less than 1,300,-000. These receipts are distributed according to the needs of the market over twelve months of the year."

"The grain business is not conducted in New England in a manner that would permit of storing it in large quantities in Boston during the period of closed navigation, as anyone familiar with the grain market will readily understand. Of this 60,000 tons, only 35,000 would probably be moved during the season of open navigation, and from this it will be seen that seven trips would take care of all of the grain if only 5,000 tons were carried each trip."

"It would not be practicable to bring grain to Boston for shipment to the interior. The local rates from Boston, exclusive of insurance charges, are so high that grain could be carried only a short distance when it would be met with a lower rate on business through Buffalo and Georgian Bay ports. Furthermore, no grain handled via the port of Boston would be entitled to milling in transit privileges—a matter of very great importance to New England."

"Is it at all reasonable to assume that traffic from interior New England could be handled by rail to Boston and then 2,500 miles over a restricted water route as cheaply as via Buffalo or Ogdensburg with only a slightly longer rail haul and a much shorter water route—less than half as long—which is wholly unrestricted where the cargo is handled in the cheapest known type of vessel for economical operation? Mr. Harriman should know that no line could thrive between Boston and Lake Ports on Boston proper traffic, but would have to draw from the interior as do all coastwise lines, but apparently he has overlooked this."

"To sum up the situation, Mr. Harriman's argument simmers down to this: 'The canal should be constructed primarily as a power project.'"

"The issue has been befogged to a very marked extent by the advocates of this project. Statistics about the tonnage of the Mediterranean and Black Seas, the Suez and the productivity of the West have been cited time and again without the slightest analysis as to the probable amount of tonnage that would seek the St. Lawrence route. No ports of destination for eastbound cargo have been named and no serious consideration given to the kind of tonnage or its origin of the probably westbound movement. The present tonnage of the Great Lakes is of no value as an argument for this undertaking unless it is conclusively shown that it may reasonably be expected to move over the proposed route."

"As a transportation benefit to New England, the project stands as a wolf in sheep's clothing, and the sooner we realize this the better for New England."

"This St. Lawrence project will have to be given a different coating before New England will swallow it."

Buffalo Morning Post:

"The growth, population and wealth of the Middle West have no more bearing on this question than have the growth, population and wealth of California or Louisiana.

"The one question on which the entire St. Lawrence plan depends is whether the proposed canal will afford a cheaper transportation route to Europe. Quoting the census figures on the population of the Middle West gives no answer to that question. Guessing that a third of the people imagine it will benefit them gives no answer to the question, even if the estimate of their number is correct. The only honest answer to this question must be found by calculating the time which a ship will require to make the voyage from ocean to lake ports through the proposed waterway; the amount of cargo it can carry; the cost of the trip in wages of crew, tolls, upkeep, interest on the money invested, etc. From that data the minimum rate which a ship must charge can be easily calculated.

"If ships could not use this canal at rates less than can be made by existing transportation routes, it is obvious that the people of the Middle West could derive no benefit from it, whether they number 40,000,000 or 400,000,000. If they could not benefit from it, they should not be allowed to spend their own and other people's money to build it merely because some power promoters have been trying to argue them into it. The mere fact that the proponents of this enterprise never can be brought to face the essential point, but always assume that the profit can be taken for granted, ought to be sufficient warning to the wise."

Hon. Frank S. Gardner, Board of Trade and Transportation, New York:

"Water power is the real objective of the great propaganda (for the St. Lawrence project). If this real objective had been squarely stated, not one of the States of the Middle West would be supporting it. But the propagandists adopted the slogan, 'The Lakes to the Seas,' and the West blindly fell into line—catspaws to draw the power chestnuts from the fire.

"The St. Lawrence water-power project is not new. The State of New York gave the Long Sault Development Company a charter in 1907. The company defaulted its payments. The charter was repealed in 1913. The company took the matter into the courts and was defeated in the United States Supreme Court, and the State reclaimed the powers which had been given away for a song. This power is owned partly by the State of New York and partly by Canada, and it will be developed when a plan is proposed that regards the interests of this State and of Canada, and which they can jointly approve. But it cannot be grabbed under any international scheme as now proposed for the improvement of navigation, or without the consent of New York State.

"Thus far this proposition and the great propaganda in its behalf have been promoted upon manufactured sentiment, where it has not been based upon unwarranted assumptions. The picture has been painted and presented to the imagination of the ambitious and thrifty people of the Great Lakes States, and, forgetting or ignoring all else, they have been led to believe that by the skill of the engineer, as by the lamp of Aladdin, the wonder will be accomplished."

The Merchants Association of New York:

"This undertaking involves an immense national outlay. It can be justified only if it be incontrovertibly demonstrated that it will result in a national benefit. Its advocates contend that it will greatly benefit American agricultural interests by lessening the cost of grain transportation. This is open to grave question. The export of grain from the United States is steadily diminishing. Year by year the grain production of the country is to a greater degree required for home consumption. In the opinion of many well-qualified judges, the export of grain by the United States will, within a few years, have practically ceased, and so far as the export of grain produced in the United States is concerned, the St. Lawrence waterway will have ceased to have value."

WOULD OCEAN VESSELS USE THE CANALS?

W. SANFORD EVANS.

With a depth of water in the St. Lawrence Canals of 25 ft. on the sills, any lake freighter than can now navigate the harbors and restricted channels of the upper lakes could carry right through to Montreal and Quebec. A large number of existing ocean vessels could also use a 25-ft. waterway. While the route would be open to both classes of vessels, it is probable, however, that most, if not all, of the grain, and of other commodities, also, would be carried down at least as far as Montreal by lake vessels and be there transshipped.

No vessel of sufficient strength and stability to prove satisfactory in the open ocean trade could be constructed, with a draught limit of 23 ft which could carry on the inland waters as economically as the type of lake freighters developed on the Great Lakes. The ocean vessel would cost more, would have a larger crew and heavier engines, would have less deadweight space and must provide more room for bunker coal and stores. The lake freighter is the most efficient water carrier so far evolved. It can be loaded and unloaded very much more quickly than an ocean vessel, and on restricted draught can carry more at less cost.

Ocean vessels that could use the canals are not the most efficient ocean carriers. There is proportionately nearly as much difference in economy between a draught of 23 ft. and of 33 ft. on the ocean as between 12 ft. and 23 ft. on the lakes. The channel up to Montreal is now being completed to a depth of 35 ft., and Quebec can accommodate vessels of greater draught. After hearing evidence in all parts of the Empire from practical shipping men and naval architects, and giving the matter very careful study, the Dominion's Royal Commission, in 1917, recommended that the approaches and harbors of the chief ports of Eastern Canada should be given a working draught of 38 ft. The building of deeper draught and larger ocean vessels, which was a clearly marked tendency of development before the war, and which was interrupted by the necessity for rapid construction during the war, will undoubtedly be resumed, and within ten years a 25-ft. channel for ocean vessels will probably be as much out of date as the present 14-ft. channel was by the time it was completed. *Ocean vessels that might attempt to go up the lakes for grain cargoes would have to meet the competition of more efficient vessels on the lakes and of more efficient vessels from Montreal outward.*

Again, physical conditions would give the lake vessels an advantage. The average season at the St. Lawrence canals is about 15 days shorter than at the Sault Ste. Marie canals. An ocean vessel would take about five days to get up to Fort William from Montreal after navigation opened, and it would have to sail from Fort William at least five days before there was any danger of the closing of the St. Lawrence canals. *Lake vessels could discharge many millions of bushels at Montreal before the first ocean vessel could load at Fort William, and they could work up to the last day of open water. Lake vessels, also, would undoubtedly handle all the wheat for domestic consumption and for winter export.*

North American exporters and shippers would find the lake vessels so much more convenient that they would tend to give them the preference. Every lake freighter to-day is within 863 miles of Fort William, and even with the route extended to Montreal no lake vessel would be 1,220 miles away. Winnipeg can reach every lake vessel owner by long-distance telephone. A lake vessel can be engaged to report on any specified day. *Except for the limited number that might find paying cargo inward, ocean*

vessels would have to be chartered to come into the lakes. Ocean vessels open to charter are scattered over the seven seas and their owners are fixing voyages months ahead. The central charter market is in London. Any pressure in the bidding for "prompt" tonnage drives rates up to high levels; and to secure the best results from competitive offers, one must be prepared to enter the charter market many weeks, or even months, in advance of loading date. The tramp generally requires at least a half a month's option as to date, and will engage for "last half September," say, or "September-October." Not many Winnipeg exporters would care to engage much tonnage in June to move new-crop wheat from Fort William in September, when a few hot, dry days, or an attack of black rust, might cut the crop in half, or wet weather delay threshing for two or three weeks. *By moving the wheat to the seaboard in lake vessels, or by lake and rail, exporters have a margin of two or three weeks in which to arrange tramp tonnage, and have the alternative channel offered by all the liner space along the North Atlantic coast.*

The ocean carrying system could not be very keen about entering the lake trade, unless at good rates. Apart from the estimate owners might entertain of real or imaginary risks, there is the consideration that it would require more ocean tonnage to carry from Fort William and Duluth than from Montreal. To move the same quantity of freight in the same number of months from Fort William as from Montreal would require as much more vessel tonnage as the time occupied in a round trip to Fort William was longer than that in a round trip to Montreal. If it be assumed for the sake of illustration that, allowing for delays in port, a vessel would make a round trip between Liverpool and Montreal in forty days, then, if it took five days to sail up the lake and five days to sail back, the round trip to Fort William would occupy fifty days. In that case it would require 25 per cent. more vessel tonnage in the Fort William trade. *But this trade is open only seven months, and the ocean system would have the surplus tonnage on its hands for the rest of the year.* This is another aspect of the problem of a limited navigation season. Of course, if lake freighters carried to Montreal instead of to Port Colborne and Buffalo, it would require more lake freighters and add to lake costs, but the probability is that these could be provided for and yet leave the balance of advantage with the lake freighter in the competition.

In view of the above considerations, and others that might be advanced, the weight of opinion among practical men is that the problem of traffic on the St. Lawrence route should be considered on the basis of transhipment from and to lake vessels at Montreal or Quebec.

Grain Trade News, Nov. 21, 1922.

DECREASE IN EXPORTS OF GRAINS AND OTHER CEREAL PRODUCTS FROM THE UNITED STATES

(Statement prepared from official reports by experts in the grain and milling business)

The surplus of wheat and other grains for export from the United States except for the abnormal stimulation of the war, has been steadily decreasing for some time past and everything points to further decline as the population of the country increases. The report of the United States Tariff Commission, entitled "Agricultural Staples and the Tariff," published in Washington in December, 1920, contains a mass of very accurate information on this subject. On page 13 of the Summary and conclusion of this Report it is stated:

"The great increase in the American production (of wheat) during the thirty years preceding the World War, had been primarily due to the new lands that were brought under cultivation. It coincided with a diminishing proportion of arable lands sown to wheat, even in the grain belt. In the older regions wheat had lost ground because of the competition of other crops and of more productive and cheaper land available elsewhere. From such unoccupied areas as may hereafter be cultivated no large contribution is to be anticipated. Moreover, the increase in production has not kept pace with the growth of population and consumption. Most of the States now consume more wheat than they produce. In the years immediately preceding the World War, American exports of wheat, in the grain, had come to consist largely of the exports of the Pacific Northwest, which ordinarily can ship more cheaply to the Orient and to Europe than to the distant American consuming markets, and of durum wheat, for which there was then only a small domestic demand."

And on page 14:

"Since 1914, however, the United States has been the dominating factor in the world's wheat and flour trade. For an indefinite period the World War has eliminated the surplus of Russia, formerly the largest exporter, and of Roumania. The shipping situation also placed a premium upon North American supplies, and the farmer was guaranteed a minimum price over twice as high as the pre-war level. In consequence, wheat cultivation has been maintained and increased in the American regions producing at higher costs. But it is significant that in the crop year 1919-20 a reduction of 20,000,000 acres occurred in the area sown to wheat."

In support of the above statements, please note the following figures, which are also official:

WHEAT

Average yearly production	Average yearly exports (wheat and flour)
1880 to 1899, inclusive, 20 years, 475,000,000 bus., 149,830,000 bus. or 31 %	
1900 to 1914, inclusive, 15 years, 678,000,000 bus., 146,495,000 bus. or 21 %	
1915 to 1921, inclusive, 7 years, 812,000,000 bus., 242,030,000 bus., or 29 %	

The significance of the above figures lies in the fact that in the period of fifteen years prior to the beginning of the World War, production in the United States, while larger than at any previous time, still did not keep pace with the increase in population, so that the exportable surplus was actually slightly less in average amount than during the previous period

and was much less in percentage. Then since 1915, due to war conditions, fixed prices and the fact that Russia has failed to export, there has been a big increase in production, with some increase in our exports.

Increase in diversified farming and exhaustion of land in the United States will inevitably tend to further decreases as conditions approach normalcy in Europe. Canada has become, and will increasingly continue to be, the principal factor in the exportation of wheat from North America.

But what about the other principal grain crops—for example, corn and oats? In the first place it may be stated that less than 25 per cent. of either of these crops ever moves from the county in which it is raised, and therefore only a small proportion becomes a factor in commerce or transportation. As regards export, the proportion sent abroad is so small as to be almost negligible, although corn figures for 1921 show an increase, due to abnormal conditions abroad.

CORN CROPS AND EXPORTS (INCLUDING MEAL)

Crop year	Total crop	Exports	Percentage of crop exported
1913	2,446,988,000 bushels	43,916,000	1.8
1914	2,672,804,000 "	43,916,000	Average 1.6
1915	2,994,793,000 "	43,916,000	1.5
1916	2,566,927,000 "	39,863,000 bushels	1.5
1917	3,065,233,000 "	66,752,000 "	2.1
1918	2,502,665,000 "	49,069,000 "	1.9
1919	2,858,509,000 "	23,019,000 "	.8
1920	3,232,367,000 "	17,761,000 "	.5
1921	3,080,392,000 "	129,054,000 "	4.2

(One-fifth to one-fourth corn exports are to Canada.)

OAT CROPS AND EXPORTS

NOTE.—Average exports ten years prior to war were less than 1 per cent. of average crop.

Crop year	Total crop	Exports	Percentage of crop exported
1914	1,141,060,000 bushels	97,169,000 bushels	8.5
1915	1,549,030,000 "	95,921,000 "	6.2
1916	1,251,837,000 "	88,944,000 "	7.1
1917	1,592,740,000 "	105,837,000 "	6.6
1918	1,538,124,000 "	96,360,000 "	6.2
1919	1,231,754,000 "	55,295,000 "	4.5
1920	1,526,055,000 "	12,877,000 "	.8
1921	1,060,737,000 "	3,224,000 "	.3

If we can put any reliance upon the trend of conditions as exemplified by the tables exhibited above or on the conclusions of the United States Tariff Commission, it is apparent that no great tonnage of grain for export is likely to be available from the United States for the St. Lawrence Canal Route.

THE ST. LAWRENCE REPORT

New York Journal of Commerce, Jan. 8, 1922.

Washington dispatches giving a somewhat fuller account of the report of the International Joint Commission with regard to navigation and water-power development of the St. Lawrence River hardly tend to remove the rather poor impression of that document gained from earlier accounts of it. For one thing, the Commission is said to have "reached the general conclusion that sufficient traffic will seek the new water route, irrespective of new traffic created as the result of the opening of that route, to justify its construction."

This conclusion is diametrically opposed to that arrived at by well qualified students who have given the matter most careful investigation. It seems to be generally conceded by those who are in a position to know best that ocean ships will not find it profitable to go above Montreal. Rehandling of freight originating, say in Chicago, and bound for Europe, is almost certain not to be avoided by any such canal as planned. It is to be remembered also that traffic passing through the canal must bear heavy charges (probably at best not much less than \$10,000,000 per year) in respect of interest on cost of construction and operating expense of navigation facilities—unless, indeed, another subsidy, this time for Western agricultural interests in the form of free passage, is being planned.

Let there be no misunderstanding in this matter. No well informed observer who has the interest of the whole country at heart wishes for one moment to oppose all constructive development of the St. Lawrence. More than 5,000,000 hydro-electric horse-power are now going to waste there. Harnessing of this energy in the most efficient and economical way not only will not in the least interfere with proper canalization of the river but can in a thoroughly sound way be made greatly to aid such a project. Furthermore, it is only by large industrial development, stimulated by a plentiful supply of cheap water-power in this general region, that a canal through the river can be placed on a sound business basis. Not only that but the development of this power should prove a boom to American industry, which it would be difficult indeed to match.

If the Commission has any but a vague realization of the vast importance of water-power development in this section press dispatches certainly do that body gross injustice. Its attention is apparently focussed upon the navigation route primarily. This project it would see completed at as early a date as is feasible. Water-power development—quite properly probably—for the present would be undertaken only along the international section of the river.

What is in some respects the least commendable feature of the whole report is that which recommends the entry of the governments of the United States and Canada into the business of installing and operating power plants. Every proposal of the kind must be strongly condemned. It is certainly to be hoped that Congress will not be induced by talk of "water-power trusts" or any other argument to consent to any plan which includes a provision of this sort. Final judgment on the report must, of course, wait fuller information, but defects such as those already mentioned appear from information already available. The whole question is one of first rate importance and it should receive careful and impartial consideration by the general public.

DR. McDougald on Outlook for the Port

Montreal Gazette, Jan. 30, 1922

One of the largest gatherings of the season attended the Reform Club's luncheon on Saturday at the club's quarters on Sherbrooke street to hear the address of Dr. W. L. McDougald, the newly appointed president of the Harbor Commission, on "Problems of transportation as related to the port of Montreal." Dr. McDougald said he had not had sufficient experience with affairs of the local port to discuss them intimately, and he, therefore, dealt with the larger measures affecting the future of the harbor, especially the proposition to deepen the St. Lawrence waterway and canal system, so as to bring Atlantic steamships to the ports on the Great Lakes. The result of his argument was that he did not regard this as a serious threat to the supremacy of Montreal, as the head of ocean navigation and the foot of lake traffic, as well as the natural centre of three great transcontinental railway systems.

Mr. James Domville, president of the club, occupied the chair, while with him at the head table were ex-Mayor Dr. J. J. Guerin, Senator J. P. B. Casgrain, Herbert Marler, M.P.-elect; Pierre Casgrain, M.P.-elect; J. C. Walsh, M.P.-elect; Senator F. L. Beique, and M. J. Walsh, while both the main dining rooms of the club were filled to overflowing.

In introducing Dr. McDougald as president of the Harbor Commission, Mr. Domville said that the recent elections heralded a new era for Canada, and he felt sure that the appointment of Dr. W. L. McDougald, an old member of the Reform Club, and one of the most successful of Montreal's business men, would also herald a new era of progress for the port of Montreal.

Dr. McDougald, who was given a cordial welcome, said that he appeared more as an old member of the club than a public official, since his appointment had been too recent to warrant any discussion regarding the internal workings of the affairs of the port, interlocked as they were with large problems of transport extending not only throughout western Canada, but to the middle western states.

Cultivate "Port Mind"

On his installation to office he had been impressed by a remark of Howard G. Kelley, president of the Grand Trunk Railway, that the people of Montreal and Canada had little adequate appreciation of what was being done for the development of this port. It would be useful here to cultivate what in New York they now called the "port mind."

For years his business affairs had brought him into close touch with the work of the port, and he characterized its development as a fascinating epic. This led him to discuss the feverish campaign through the middle western States for the further development of the St. Lawrence waterways, primarily to establish ocean traffic with the great lakes, and to give that area of the United States cheaper access to the sea routes, a proposal in this regard being now before the United States Congress.

The Union League Club of New York had recently issued a pamphlet on this subject, setting forth that in the past season Montreal had exported more than twice as much grain as in any previous year in its history, and more than all other Atlantic ports combined. The pamphlet urged that New Yorkers should realize this fact, and work to prevent further diversions of their trade to Montreal.

Dr. McDougald also quoted a number of utterances of American State governors urging the St. Lawrence ship channel work, while others, including the New York Union League Club, opposed it, especially on the ground that it would entail a large expenditure of American money for work within the territory of Canada. In addition to this there was the question of water power rights, which would give rise to interminable litigation. On the other hand, the western American protagonists of the scheme supported it, as the only means of preventing them from being marooned on productive lands too far away from cheap ocean transportation for profit, the western American press being practically unanimous in supporting the project.

Toronto Preparing

In Canada there was also strong support for the project, both for shipping and power development, while Toronto was already planning harbor improvements to handle ocean freighters, at a cost of \$37,000,000, while the Toronto press was urging the King government to start on this international work.

It was the tremendous development of the grain carrying trade of Montreal that had brought this matter to what New York called the "crisis stage." During ten years past the port of Montreal had averaged 50,000,000 bushels of grain a year, while in 1921 the total of all grain handled, Canadian and American, was 138,453,980 bushels, more than New York, Boston, Portland, Baltimore, Philadelphia, New Orleans and Galveston combined. It was a peculiar feature that Montreal's receipts of grain from the western States far exceeded those from the Canadian west.

Whether the high mark set during last year could be kept up depended on what measures could be devised to secure an increase in the percentage of Canadian grain finding its outlet through Canadian ports. Montreal's growth as a grain port had synchronized with a steady decline in grain shipments via New York, despite the enlargement of the Erie Canal, and it was found that the port's grain handling equipment was obsolete.

For himself, either as an official or a citizen, Dr. McDougald said he, with present crude information, could reach no satisfactory conclusion on the various phases of this matter, national, international, diplomatic, commercial, financial and engineering. Nor could he anticipate what the policy of the Canadian Government would be.

"But I do hold," said Dr. McDougald "and I have entire faith that whatever is ultimately determined upon, nothing can happen which could prejudicially affect the commerce and supremacy of this port. As in the past, the commerce of the great west will follow lines of least resistance, and these lines and routes lead inevitably to and from Montreal. So Montreal, admirably discharging the functions assigned her by nature, is 'carrying on' steadily and intrepidly, having no interest to serve but the general welfare of Canada, and her own commercial supremacy." (Applause.)

MACKENZIE KING IS APPEALED TO BY TASCHEREAU

Montreal Gazette, February 22, 1922.

Quebec, Feb. 21.—An appeal to Hon. W. L. Mackenzie King, Prime Minister of Canada, not to permit the schemes for the deepening of the St. Lawrence River, was made to-night by Premier Taschereau on behalf of the Province of Quebec.

It was at the banquet given at the Chateau Frontenac to-night by the citizens of Quebec to Hon. Ernest Lapointe, Minister of Marine and Fisheries, that the provincial Premier took occasion to make his plea. I was the first appearance of the new Premier of Canada in this provincent since his accession to his high office, and Mr. King was given a reception that for warmth was worthy of this hospitable city.

The Province of Quebec will oppose the scheme for the development of Canadian waters to be controlled by an international waterways commission," said Mr. Taschereau, "and", he added emphatically, "I ask you, Mr. King, to oppose that plan whenever it comes before you. The Province of Quebec opposes it because it means giving our resources to the Americans. I do not want the United States to come to the Province of Quebec and get the water-powers given by God to this country. We of the Province of Quebec cannot consent to give our resources to the Americans."

Premier Tashereau proposed the health of the Government of Canada. He said that the victory gained by the Liberal party in Quebec showed that the spirit of Laurier still existed. He paid his respects to Premier King, Mr. Lapointe and Sir Lomer Gouin, expressing regret that the latter's visits to Quebec were becomng just as scarce among them as an apostle of temperance. He urged Sir Lomer to visit them and not think that the limits of his interest terminated at the limits of the domain of Mederic Martin. Quebec was desirous of marching forward in the most complete manner with the whole of Canada towards the destiny outlined for her. They looked for complete and entire co-operation for the main-tenance of their autonomy. He had confidence in their friends at Ottawa. He would see that the Province of Quebec and other provinces would have their complete autonomy, that not only their rights but their prejudices should be respected, and that the French laws of the province would be completely respected. Another thing he asked their friends at Ottawa in the name of the Province was that the duties imposed should not be such as to stop industry and commerce. He understood the difficulties of the problem and the terribly heavy burden that had been placed upon them. The world was sick after the war, and Quebec had suffered more this year than before. There was misery and lack of work; capital was scarce, or had gone to the United States. The remedy was that all should do their utmost and there should be the greatest economy by governments, municipalities and individuals. They had at Ottawa people in whom they had supreme confidence and for that reason he desired to speak of other problems that interested them at this moment. They saw in the press recently that there was a project that originated in the United States for the construction of an international waterway destined to connect the Great Lakes and the St. Lawrence by a maritime canal 25 to 30 feet deep which, it was said, would cost in the neighborhood of \$560,000,000 and more—probably a billion dollars. "There are two reasons behind this project," said Mr. Taschereau, "first, notable advantages from the point of view of transportation, and second, a prodigious increase in hydraulic power. They speak much of the first but little of the second.

"It is completely proved that the export traffic will not justify the construction of this canal. All the Atlantic ports united together are not exporting more than four million tons of grain, and the man who speaks with most authority in the United States to-day, Mr. Hoover, has declared that in ten years—the time when the canal will be about finished—this country will have no wheat to export.

United States' Desire.

"The question, therefore, arises, what is it our neighbors desire? They want something else. If you take the figures the engineers have prepared, the construction of the canal in question will create in hydraulic power in the neighborhood of 4,100,000 horse-power. It is to be observed—and that is a point on which the Americans do not insist—that of this 4,100,000 horse-power, two-thirds of it are situated in the midst of our jurisdiction, of an international commission, 4,100,000 horse-power which they would like to utilize to their advantage, that is to say, they ask of the Province of Quebec to take away 2,700,000 horse-power, or, if you prefer it, to put it under the control of an international commission for the immediate and ultimate benefit of our neighbors of the United States.

"If we let our electric powers and canals get into the control of an international commission, where shall we be? As Prime Minister of the province, I declare in the name of the province that the Province of Quebec will not have this project.

"I do not know if Mr. King speaks French, but I hope you understand what Frenchmen say, and I hope you will not give one little parcel of the territory which Nature has given us to the United States. (Applause. Eighty per cent. of the wheat from the Great Lakes is Canadian-grown. Why should that not be sent through Canadian ports? I demand of the chief of the Government at Ottawa that the ports of Montreal and Quebec have the full benefit of our railways and that the exportation of the grain from the West shall take place through Canadian ports. (Applause.) We have no illusions as to what an international commission would mean—even with an equal number of representatives, and the approval of such a scheme as is proposed would surely not be the work of a good government such as the one that has just been elected, for it would be an alienation of the rights of the Province of Quebec, to which we would never consent to submit."

After Premier King had spoken in reply, Sir Lomer Gouin concluded the speech-making with a few brief words of congratulation to all his colleagues.

WATERWAYS PLAN IS CONDEMNED BY CAPTAIN WILLIAMS

St. Lawrence Navigator Tells Premier Taschereau it is not Feasible
Montreal Gazette, March 3, 1922

(Special to The Gazette.)

Quebec, March 2.—Premier Taschereau is receiving support from Ontario because of his stand against the project for the deepening of the St. Lawrence River and construction of a canal system and a water power development scheme in connection therewith. He received a letter to-day from an old river captain, Captain F. D. Williams, of Kingston, Ont., in which the whole scheme is roundly condemned.

Captain Williams writes in part:

"I feel that I cannot let the opportunity pass of congratulating you on the position you took at the banquet a few nights ago concerning the proposed deep waterways of the St. Lawrence, now agitating both the United States and Canada.

"I have been following this question and it is indeed interesting to myself to hear so many opinions voiced on the subject, particularly by some who do not know anything about the matter and have never even seen the St. Lawrence. I am not an engineer nor a professional man, simply a river St. Lawrence captain, sailing these waters west of Montreal for over thirty years, and I say that such a scheme proposed is absurd. It is impracticable, infeasible, and, in my opinion, impossible. The present class of vessels navigating these waters to Montreal are the largest that will ever do so, and it is only with the most careful management and with utmost caution and best of pilots that these vessels with a 14-foot draft are able to get through, and during each season many come to grief as it is.

"The very idea of any person thinking that an ocean-going steamer could proceed west of Montreal is too absurd for anyone knowing the situation to entertain for a moment. One of our fastest boats takes twenty-five days to make the trip from Montreal to Port Arthur and return, and that means running all the time without any delays of any kind whatever, and allowing one day for unloading and one day for loading. The usual time for these boats is thirty days to make the round trip, so that, even were it possible, how much longer would it take an ocean liner, which would have to proceed so much slower through the canals and in dangerous places?

"The whole river between Kingston and Montreal would have to be blasted and dredged out, islands removed, every harbor in the lakes deepened and many other obstacles too numerous to mention.

"Any competent steamboat captain like myself knows the scheme is impossible, and what is the use of losing time over such a fool-hardy project which billions of money could not complete?"

Far-Reaching Problem

"Sir, to interfere with the natural flow of the St. Lawrence between Kingston and Montreal is a serious and far-reaching problem. They talk of dams; well, in the month of February, 1899, an ice bridge was formed across the St. Lawrence River six miles above the Long Sault Rapids. The floating ice coming down made that a solid dam to the bottom of the river, with the result that thousands of dollars' damage was done to property on both sides of the river. Buildings were swept away and the damage was inestimable. Just another instance about dams. In the year 1878 the Government undertook to deepen a channel down the Galops Rapids on the recommendation of the engineer. At the time vessels could navigate the rapids with 9-foot draft. The object of the engineers was to make the channel navigable for vessels of 14-foot draft. Well, sir, the Government worked in these rapids for 31 years (just think of it, 31 years), spending millions and millions of money, and in the end they decided they could not make a channel down the Galops Rapids with safety for a 14-foot vessel, and one of the engineers, the late T. S. Rubidge, recommended that dam be constructed between the two islands just above the Galops Rapids, and thus force all the water to go down the Galops Rapids. Well, the dam was built at an enormous expense, and when it was completed, instead of the water going down the rapids, as the engineers had planned, it all moved around the other side of the island and did not go the course they had

expected at all, with the result that it lowered the water in the Galops Rapids two feet. Thus, where vessels used formerly to navigate in a nine-foot channel, there is only seven feet at the present time, and, in consequence of all this bungling the Government had to build a lock, and all vessels passing have to use the lock now, so that after 31 years' of work the building of a dam, spending millions of money, all the work is practically useless, and the engineer in charge at Ottawa, told me himself only a few months ago that they were considering it advisable to blow this dam up.

"Sir, these are facts. I have no confidence in these engineers. Just ask any pilot or any captain who knows these waters, about an ocean-going vessel coming up. He will tell you it is absurd, it is impossible. They know, and know the facts well. I dislike to see the Government spend any more money on any such fool hardy ideas. I say now, and most emphatically, that never will it be possible for any vessel to navigate the waters between Kingston and Montreal any larger than the present type of vessel.

"It would be a calamity to interfere with the beautiful rapids of the St. Lawrence, through which the Canada Steamship lines carry thousands and thousands of passengers every year on their beautiful light-draft, rapid boats built for the rapids.

"These tourists come from all over the world to run the rapids, perhaps one of the most beautiful trips in the world, and what a benefit it is to Montreal and Quebec cities!

Enough Power Now

"Now they speak of water-power. Well, why don't they use the power already available, for instance, at Lachine, at Cedar, at Cornwall, at Cardinal on the Canadian side, and several places on the United States side, where there is power all ready for use and not being used whatever.

"There is sufficient power already available on both sides of the river for all purposes, but no persons seem to want it whatever. The old power plants at some places are entirely tied up, so that is no excuse whatever.

"Sir, this whole proposed scheme is only a fictitious plot.

"The sooner people forget it and set their minds on some other project which will be of benefit to our country, the better for us all.

"I sincerely trust that you will continue to fight these schemes and put an end to all such absurd ideas as quickly as possible."

DEBATING THE WATERWAYS

The Hamilton Herald, Sept. 16, 1922

Many Hamilton citizens have more information and ideas about the St. Lawrence Deep Waterways project from which to form definite opinions than they had before last evening. The debate between Senator Lynch-Staunton and J. H. Duthie, secretary of the National Waterways Association, the outcome of Mr. Duthie's public challenge to the senator, proved to be as informative and suggestive as had been expected. It was conducted in a decorous and courteous manner as between gentlemen; the arrangements by the Hamilton Commercial Salesmen's Association, under whose auspices the debate was held, were admirable; and the audience—so large as to crowd the auditorium of the I.O.O.F. temple—was deeply attentive throughout.

It cannot be said that either gentleman presented any new facts or arguments in support of his contentions; but the information which had been published was clearly and concisely presented, and the familiar arguments were employed with force.

Mr. Staunton's criticism of the project was destructive, and, it must be added, impressive. The senator recalled the glittering promises of twenty years ago how the cost of transportation in Canada would be lowered by the construction of a second trans-continental railway, and soon afterwards how there would be more lowering of transportation costs by the construction of a third transcontinental line—with the result that freight rates are higher to-day than ever before and the people of Canada are taxed annually to the amount of about \$80,000,000 to pay for the needless railway construction. We are told that the proposed waterways project is needed to prevent the congestion of railway traffic, and yet the fact is that nearly 5000 miles of Canadian railways owned by the country are used hardly at all because it does not pay to operate them. The waterways project would divert traffic from the national railways, and thus adds to the deficit which must be made good annually out of the tax revenue.

Mr. Duthie had dwelt upon the great saving that would be effected in transportation charges by having the whole surplus product of western Canada transported overseas from the head of the lakes without breaking bulk. But Mr. Staunton pertinently asked what was to be done with the enormous fleet necessary to carry all the grain, during the months when there would be no grain to carry; also what they would carry up the river and lakes as return cargoes. The senator pointed out that, for some years at least, there would be a limited market in Canada for our share of the power generated by canal construction; that it would therefore be necessary to dispose of the surplus power by sending it into New York state, and that once it was alienated and became the basic element in American industries, it could never be recovered even when it would be needed in this country. He also protested earnestly against permitting a foreign government to share with the Canadian government the joint ownership and control of so important a link in the Canadian transportation system as the Welland canal.

These points evidently impressed the audience. In fact the balance of the discussion appeared to be in the Senator's favor.

WATERWAYS PLAN IS MUCH DOUBTED

Montreal Gazette, Oct. 5, 1922

Reiteration of its stand that the Canadian Government should not launch into the project for deepening the St. Lawrence waterway so as to permit ocean vessels to reach the head of the great lakes until the country's financial position had so far improved as to warrant the task, was made by the Council of the Montreal Board of Trade at its weekly meeting yesterday. Coupled with the objection, the Board of Trade before committing itself to such a project is anxious for definite information on a number of points of the scheme, the resolution passed expressing scepticism as to the claims made by adherents of the plan.

The report before the council yesterday was from the Harbor and Navigation Committee, and was unanimously adopted. Its conclusions read, in part as follows:

(1). That from reports of well qualified engineers, appointed by the Governments of Canada and the United States, it would appear to be possible that the proposed scheme of the St. Lawrence Waterways Improvement could be undertaken with some expectation of success, though no such great body of water has hitherto been successfully controlled.

(2). That before your committee could be convinced as to the wisdom of recommending this project to the Dominion Government, certain information should be available, this including (a) the claim that ten cents per bushel would be added to the value of wheat raised in the Western part of Canada and the United States, regarding which the committee is sceptical seeing that from 1910 to 1916 the freight rate on wheat from the head of the Great Lakes to Liverpool averaged $10\frac{3}{4}$ c. per bushel, and the present average rate to Montreal is about ten cents per bushel; (b) The estimated cost of development of each section of the proposed canals and waterways and of the approach to the harbors of the several places where boats would be expected to load and unload: (c) The effect of the development on the flowage of water above and below the many dams that would be erected, also the possibility of flooding in many sections:

(d) Regarding the comparative time and cost of taking an expensive high speed ocean going vessel, with a crew necessary to navigate the Atlantic, to the head of the Great Lakes, as compared with the cost of barges and other craft now used for carrying grain from the Lake Port elevators to the port of Montreal; (e) That the whole question of cost should be very carefully considered as at the present time Canada is not in a position to take on a further financial obligation of such tremendous magnitude; (f) That it is doubtful whether joint control by the Canadian and United States Governments of the proposed extensive system of canals and waterways will be possible without leading to many complications which might result in the possible rupture of the pleasant relations that for over a century have existed between the two countries.

Plenty of Power

(3) That it would appear that the increased electric power to be provided through the proposed development would be for the most part available in that section of Canada where power is already in excess of the requirements, and that when additional power may be needed it can be obtained at a much lower cost than by the proposed development; that eminent engineers state that the modern development of the Lachine Rapids would readily furnish one million additional horse-power, and that the same amount can be developed at the Long Sault Rapids, also that at the Cedar Rapids and other points more power than will be required in the vicinity of Montreal for some time to come.

The report concludes, as follows:—Your Committee suggests that the Council of the Board of Trade should reaffirm its opposition to any serious consideration of the proposal by the Canadian Government until Canada's financial position has so far improved as to warrant embarking on such a costly undertaking and until the questions raised in this report and in any others have been thoroughly investigated by competent authorities.

The Council thanked Mr. A. O. Dawson and his colleagues on the Harbor and Navigation Committee for this very full report which it declared embodied very faithfully its unanimous views in connection with this scheme.

THE ST. LAWRENCE WATERWAYS

Montreal Gazette, Friday, January 5, 1923

Unless all signs fail, the approaching session of Parliament will witness an organized and determined effort to force the Government into a partnership with the United States in the development of the St. Lawrence waterways. The signs are numerous. The campaign will be conducted, ostensibly at least, by advocates of the project in this country, but it will have the moral support—if no more—of the formidable United States interests which have been actively and continuously engaged in promoting the enterprise. These interests will watch with the closest attention the progress of a movement in whose success they are deeply concerned. Moreover, they expect that the movement will be successful. They appear to have known that the attempt would be made long before the general public in this country knew anything about it, in testimony whereof may be cited the confident declarations made by sundry public men in the United States that the co-operation of the Canadian Government was assured. It is not necessary to assume that the Canadian advocates of the project, or the majority of them, at any rate, are anything but sincere in their advocacy. They have allowed themselves to be beguiled by the magnitude of the proposal and the plausible predictions of benefits to be obtained. They are not consciously engaged in pulling out chestnuts for somebody else, but there is plenty of evidence that others are keenly interested in the success of their efforts.

The situation in respect of this ambitious project is in the hands of the Canadian Government. The International Joint Commission has reported in favor of the undertaking and engineers employed by the two Governments have declared the scheme to be feasible. The Government of the United States has also signified its approval and has invited the Government of Canada to enter into an agreement for carrying out the recommendations of the Commission, or, failing that, to pledge itself to the principle of international development. This invitation was communicated to the Canadian Government through the British Embassy at Washington in May of last year. It was considered and the reply was made that there had not been sufficient opportunity to study the report of the Commission “and that, moreover, having regard to the magnitude of the project and the very large outlay of public money involved, the Government is of opinion that it would not appear to be expedient to deal with this matter at the present time.” This reply was embodied formally in a report of the Privy Council, and was duly transmitted to Washington. It was the only reply that having regard to all the circumstances, the Government would have been justified in making, and Canadian public opinion was satisfied with it.

The matter was not allowed to end there. On the contrary, the propaganda was continued, both in this country and in the United States, supported, apparently, by strong organizations. The disappointment expressed across the border when the reply of the Canadian Government was made known was succeeded, a little later in the summer, by a singular optimism, and it was then that the confident predictions of a change of attitude on the part of that Government were made. There was no apparent ground for such optimism, barring the suggestion that Mr. Mackenzie King's extraordinary desire to revise the Rush-Bagot agreement might be turned to account by the Washington Government in connection with the St. Lawrence development question. More light was shed upon

the mystery when the announcement was made recently that Canadian supporters of the development project proposed to urge upon the Government the desirability of immediate or early action.

It is to be expected that this question will be pushed to the front before the parliamentary session is very old. It is a matter in regard to which party allegiances may not prove altogether dependable. The project has its advocates in Ontario and also in the west, men who profess to see great economic advantages from the standpoint of transportation alone, who accept without question the statement that ocean vessels will find their way to the head of the lakes. In this province these visions are not seen, nor is public opinion in Quebec satisfied that the project is primarily one of navigation at all, that power development for the advantage of interests other than Canadian does not, in point of fact, come first. Even without the conflict of opinion which thus exists, the Government should experience no difficulty in determining the course to be pursued. Every consideration which warranted the reply which was sent to Washington last May is as weighty now as it was then. Canada is in no position financially to undertake so vast a project even if the promised benefits were assured, which they are not, and even if the proposal was not open to one paramount objection which its advocates have never yet attempted to meet, namely, that Canada, by such an arrangement as is proposed, would forfeit control over its great natural highway to the sea and would open the door to endless difficulty and misunderstanding.

ST. LAWRENCE SHIP CANAL

Montreal Herald, Tuesday, January 9, 1923.

In an editorial last week the *Montreal Gazette* gave some cogent reasons why Canada should not enter on any scheme for the canalization of the St. Lawrence from Lake Ontario to Montreal. While it is true, however, that the scheme recommends itself to the states of the Middle West, it is hardly correct to assume that our own Northwest would be a unit in favor of it, as an outstanding instance will show.

The Regina Board of Trade appointed a committee to study this project, which reported that any advantage to the movement of western grain would not compensate for the heavy expenditure, and submitted the following general conclusion:

"It seems therefore, inadvisable to this committee to recommend to the full board the approval of this scheme at present as a general national project, there not being sufficient general demand on the part of Canada for the undertaking and an indefiniteness of the whole plan and an uncertainty as to the cost." There is no reason to believe that any different conclusion would be reached by any other responsible western body which devoted the same careful study to it.

There has been a very active propaganda, chiefly originating in the United States, calculated to convince the public that the project is feasible and not too expensive, yet it has nevertheless been assailed by hostile criticism in New York State, New York City, Boston, Baltimore and New Orleans, and also in Montreal. In a debate between Governor Miller of New York and Governor Allen of Kansas, the former expressed the opinion that the project is not practical. He believes that the investigation of the engineers, as embodied in the report of the International Waterways Commission, was superficial, and that from the casual examination made there is no positive assurance that the project can be carried out as contemplated.

So there are two opinions about it. Take, also, the view expressed by Sir Robert Perks, the eminent English engineer, contractor and financier, who published an article against it, concluding with the sapient advice that "in international matters, as well as in private or domestic matters, it is not good policy, or prudent, to give the key of your front door to your neighbor."

In addition to all this, there is the best of evidence to show that the present shipping facilities are amply sufficient to handle promptly the produce of the West. As to cost, there is expert evidence on record that lake and river vessels designed expressly for the requirements of the route are able to move grain from the head of the Great Lakes to Montreal so much cheaper than ocean vessels could do that the difference would cover the cost of transferring the grain at the port of Montreal. In the case of large cargoes there would be the additional advantage of shipping the cargo in various directions on the various lines operating out of Montreal, which would also permit one extra handling of the grain and in many instances keep it from heating, often a decided benefit. On the whole, whatever may be said for the canalization of the St. Lawrence from a power point of view, so much desired by certain interests, the best available evidence shows that there is no navigation in it.

MORE INFORMATION ON DEEP WATERWAY PROJECT IS SOUGHT

Montreal Gazette, Jan. 19, 1923.

(Special to The Gazette.)

Winnipeg, Jan. 18.—When the delegation goes before the federal ministers at Ottawa on the 23rd instant to discuss the St. Lawrence deep waterway project, they will stress the point that more information is desirable and ask for more complete investigation of the entire question, not only by engineers but also by men competent to inquire into the other phases of the project. It is realized there is no spontaneous movement in Canada, outside of a limited narrow circle, in support of the proposal; that in circles where there is neutrality the necessary confidence is lacking, chiefly because the men behind the report of the International Joint Commission do not carry sufficient weight.

The Western governments are being approached this week by the Secretary of the Windsor Board of Trade and the Deep Waterways Association, and are being requested to lend support to the delegation to Ottawa. There was no previous intention of doing so. Premier Bracken will bring the matter to the attention of his Cabinet, but he has intimated the Government will not be represented by a minister and will decide whether Manitoba shall be represented at all. The agent for the promoters has proceeded to Regina on a like mission.

Indifference in West.

Indifference in the Western provinces to the St. Lawrence deep waterways project is evident; nowhere does it arouse more than a passing interest. The Hudson Bay route has caught Western imagination, and farmers' conventions are giving the northern route their united and enthusiastic support and demanding that the railway be built to tidewater.

N. Y. Canal Project

It is being represented to the Western people and Governments that the present organized effort in the 18 States of the American Union will not be able to hold its temperature at the proper heat much longer, and that unless Canada consents to terms there will be a new and larger canal built from Oswego to Albany to hold the trade for New York. The argument is also made that the Government of Canada will not be asked to do more than guarantee the bonds, and that the revenue from power will care for all fixed and operating charges. There is no attempt to discuss the political difficulties involved, nor the advisability of entering into a pact with the United States on so important a matter. The failure of the British Debt Funding Commission to arrange terms at Washington is not being overlooked in Western Canada, where the proposal to collect interest at $4\frac{1}{4}$ per cent. from Britain on a five billion war loan, a large portion of which was passed on to the Allies, is an illustration of international over-reaching which will not be *without lasting effect in Canada*. Whether Canada should enter into a deal with a neighbor who is inclined to insist on bargain counter terms and exact interest from an ally who led the way by two years in war, and is inclined to be generous in peace terms, is a question to be considered carefully. It is one of the phases of the St. Lawrence waterways project to be weighed along with other angles and issues involved. Once an agreement were reached on terms with any United States delegation, there would be no guarantee that the tentative agreement would be finally ratified by the Senate. How long the matter would be the subject for political football is problematical. Meantime, there is no reason why Canada should be hurried into the position where the initiative would rest entirely with the United States.

DEEP WATERWAYS NAVIGATION PLAN URGEI UPON GOV'T *Montreal Daily Star, Jan. 23, 1923.*

Ottawa, Jan. 23.—(Star Special From Own Correspondent.)—Acceptance by the Dominion Government of President Harding's invitation to a conference of Canadian and United States representatives to discuss the basis of a treaty for the Great Lakes ocean navigation scheme was urged upon the Government to-day by a delegation from the Canadian Deep Waterways and Power Association supplemented by representations of various municipalities in Ontario and approving contributions from the Prairie Provinces.

The memorial proceeded to emphasize the benefits to the West from more efficient and economical transportation. Without criticizing the railroads, it was pointed out that there had been neglect to scientifically co-ordinate rail and water transportation. The great factor in the cost of handling grain was in the necessity of transferring cargoes from large to small vessels. When this was overcome in part by the completion of the Welland Canal the obstacle would be transferred to Prescott. It was estimated that the ability to ship to tidewater in one bottom, had it existed, would have saved producers \$12,270,000 last year.

Proceeding, the memorial set forth: "Of the 245,433,000 bushels of grain exported from Canada last year 159,873,000 bushels, or 65 per cent., was shipped through American ports, while only 85,560,000 bushels, or 35 per cent., were handled through Canadian ports. With the new Welland Ship Canal in operation and the St. Lawrence channels improved as recommended the volume of grain seeking ocean tonnage at Montreal would be so greatly increased that the authorities at that port would have

to increase their facilities to look after the business, and there would be sufficient surplus business to tax the capacity of the Quebec Harbor and require the assistance of ocean tramp steamers to handle the crop."

The delegation was introduced by W. M. Germain, M.P. for Welland, and the speakers included O. E. Fleming, of Windsor; A. C. Lewis, M.L.A., secretary of the Waterways Association; Hon. R. J. Manion, of Fort William; Controller Tope of Hamilton, Mayor Bassett of Whitby, and Hugh Stewart, M.P. for Brockville.

Premier's Reply:

In his reply to the delegation the Premier said:

"I hope you will feel that the number of Ministers here express the deep concern of the Government in this matter. We realize its magnitude. It has international aspects as well as those which are financial and economic, and you will not expect a definite commitment to-day."

"You will appreciate how, in a matter of this kind, there should be careful thought of what is said."

Suggested Treaty:

"The official communications from the United States have been in the nature of suggestions that we meet them to make a treaty."

"They did not suggest a conference as a preliminary step to ascertain whether a treaty was desirable. I have the file of correspondence here. If we had answered them in language corresponding to theirs we would have had to commit ourselves to a treaty."

"The question of being prepared to sit down at a table and ascertain whether or not a treaty is advisable is a less advanced step and in view of the representations of these large gatherings we will be able to consider that proposal whenever it is made."

"You might suggest a conference to the United States," ventured W. M. Germain, M.P.

"That is a matter we should consider carefully and we will," answered the Premier.

ST. LAWRENCE WATERWAYS

Montreal Gazette, Jan. 23, 1923

To the Editor of The Gazette:

Sir,—Stripped of propaganda and appeals to the imagination, what underlies the present proposals with regard to the St. Lawrence waterway is that the national transportation policy pursued in development of Canada's railway system is to be abandoned. As regards our waterways—that, the greatest of all our waterways, the main outlet for the products of the Canadian Northwest shall pass under international ownership and control.

We now have a magnificent waterway from the head of the lakes to tidewater through which our national commerce passes, subject to no restrictions save those imposed by our own government. It is to-day the cheapest route to the Atlantic seaboard. It has never yet been used to one-half of its capacity. It is a national asset, and a safeguard of Canadian commercial independence.

Now it is proposed that we shall throw it on the scrap heap and, in partnership with the United States, spend three times what it cost, and

probably a great deal more, in constructing a new international water-way over the same route. Though nine-tenths of it lies in our own country, we are to admit the United States to joint ownership and control.

It is true that the International Joint Commission suggests that those portions of the work entirely in national waters shall be under the control of the nation in which they are situated. These are idle words and meaningless. Ownership will unavoidably carry control. Claims of vested right would soon be based on American traffic to complicate the situation, and if only one lock is international it controls the entire system.

In the nineties, our government adopted a plan of granting rebates of Welland Canal tolls on grain carried to Montreal for export. It was a measure of purely internal character for the benefit of our own commerce. Yet, on representations from Washington, it was abandoned. If this could happen on our own canals, what valuation could be placed on our share of control of a waterway jointly owned?

The real trend of the proposals is clearly understood in the United States. Witness this, from a leading American paper:

"Under American control, and with the power of the St. Lawrence made available, the area might become one of the most remarkable industrial districts in the world."

Or this, from the report of a New York State Commission:

"As a matter of prudence and good statesmanship—there should be a cession of territory the entire length of the St. Lawrence River, five or ten miles back from the river, constituting a zone like the Panama Canal zone."

The plea is advanced that we should sacrifice national rights and alienate a portion of our national heritage in order to prove our friendliness. Are our boasted friendly relations of a century so precarious that we must divest ourselves of our national rights and property in the St. Lawrence to maintain them?

Put the boot on the other foot for a moment. Suppose the proposed waterway ran from Buffalo to New York. Would the United States for an instant consider admitting us to a share in its ownership and control, on the ground that we had a joint interest in the Great Lakes and rivers between them over the thousand miles between Duluth and Fort William and Buffalo?

Once the St. Lawrence enters Canada at Cornwall it is ours to develop as and when we may think fit. The right of the United States in the river below that point is defined by the Treaty of Washington, viz.: that of free passage for vessels of commerce. We are under no obligation to improve channels.

When the Treaty of Washington was formulated, only vessels of 3,000 tons could ascend to Montreal. We have since at great cost, made a channel for vessels of deep draught and built up a great national port.

This puts advocates of the scheme on the horns of a dilemma. Either ocean vessels will not use the waterway and their whole propaganda is baseless, or if they do we enable the United States to establish a competing ocean port only sixty miles from Montreal. By virtue of the rights they already have under the treaty, they would thus become independent of us altogether, and be in a position to reap the benefit of all our outlay on the ship channel and make the St. Lawrence practically a river of the United States, from Lake Ontario to the ocean.

According to the findings of the Joint Commission, it is the Middle Western States who have the greatest need for the waterway, and who will reap the greatest benefit from its construction. We have already done much more than our duty towards the Western States, so far as friendliness goes. Read the report of the Canal Commission of 1871 for proof. The deepening of the St. Lawrence canals from 9 to 14 feet was undertaken, not because of any Canadian traffic then existing (the Canadian Northwest was then entirely unknown) but mainly to afford an outlet for the products of the states bordering on the Great Lakes. Did these states take advantage of the improvement? No. The sum total of all their traffic through the St. Lawrence canals in the past fifty years, if it had paid a toll of \$1.00 per ton, would not pay for a single year the interest on their cost of construction.

Yet these states are the most urgently insistent that Canada shall undertake to spend hundreds of millions more on a practically unsupported supposition that a few feet additional draught of channel will enable them to ship their products to better advantage.

Let us not be fooled by appeals to imagination and sentiment. It will be too late to study the consequences of a bargain after hands have been struck and earnest money has passed. The prospectus is too flowery and doesn't disclose sufficient facts on which to base any sound judgment of the value of the investment. The Joint Commission, on the face of their report, admit that our present knowledge is insufficient to justify any action, though they are clear on the point that the United States has most to gain. The real meat of their report lies in their recommendation that the matter be referred back for further investigation.

The only possible answer under the circumstances has already been sent to Washington—that the time is not opportune for Canada to negotiate. Nothing has happened since to make it so.

Press despatches indicate that a determined assault upon Ottawa is to be made during the coming session of Parliament. One of the chief promoters in the United States is quoted very recently as having given firm assurance to the people of the Western States that within sixty days Canada would announce readiness to proceed with negotiations.

The government can in no way better merit the confidence of the Canadian people than by standing firm in the position they have already adopted and refusing to be drawn with undue haste and with insufficient knowledge into any committal to obligations of enormous extent and unknown limits and fraught with serious possibilities for the future of Canada.

THOMAS ROBB.

THE WATERWAYS DEPUTATION

Montreal Gazette, Friday, January 26, 1923.

The exchanges which took place between the members of the Dominion Government and the waterways deputation on Tuesday do not seem to have been altogether without guile. Mr. W. M. German, M.P., who introduced the deputation, appears to have done some preliminary scouting, during which, presumably, he obtained a fairly dependable idea of the Government's position and of how far the delegation ought to go in its request for action. Mr. German is a politician of long experience and it may fairly be surmised that he was as willing to make things as easy for the Government as for the members of the deputation. What followed

was that the advocates of the waterway did not ask the Government to commit itself to the scheme immediately, to accept the invitation of President Harding for a conference. Now that invitation, as pointed out by the Prime Minister, was for a definite and set purpose, and its wording did not admit of any doubt as to the nature of that purpose. Canada was asked, not to discuss an abstract question, but to agree with the United States upon the principle of the waterways project; in other words, this country was asked to commit itself. Mr. Harding wanted, first the immediate negotiation of a treaty upon the basis of the report made by the International Joint Commission. Failing that, he wanted a treaty "pledging the two governments to undertake the execution of the project" upon terms to be agreed upon subsequently. The reply of the Canadian Government was a refusal.

The Prime Minister is reported as having assured the deputation that the Government now stands ready to consider the question of negotiations should a proposal to that end be received. What does that mean? The invitation of Mr. Harding was declined upon two grounds, first, that the plan had not been studied sufficiently, and, second, that the magnitude of the undertaking was such that "it would not appear to be expedient to deal with this matter at the present time." Has either of these obstacles been removed? Assuming that the Government has studied the proposal—which is doubtful—it can hardly have been convinced of the practicability of the scheme, or of its expediency. Unless this country is prepared to join with the United States in giving effect to the recommendations of the Commission, or to some similar plan, there can be no object in negotiating or in discussing the matter at all. A willingness to consider the project in international conference implies a willingness to enter into an agreement of some kind, and it will be so interpreted by the United States. If the Canadian Government has no intention of permitting the negotiations to bear fruit, it should not enter into them at all and its position should have been stated frankly and definitely to the deputation. Either there was a great deal of humbug about the proceedings at Ottawa on Tuesday, or else Mr. King and his colleagues are receding from a safe, prudent and patriotic position, and are yielding to the importunities of the very powerful interests that are back of the waterways campaign. Which is it?

The members of the Canadian deputation, in presenting their case, put forward the arguments familiar in the waterways propaganda. At no stage of the proceedings does there appear to have been any attention given to the fundamental objection that this whole project is inimical to Canadian national interests. This objection was forcibly stated by Mr. Thomas Robb in a letter to *The Gazette* a few days ago. Mr. Robb, an acknowledged authority upon matters of transportation, discredits the waterways scheme from the transportation point of view, but he puts a weight of emphasis upon the danger involved in the proposal that "the greatest of all our waterways, the main outlet for the products of the Canadian Northwest, shall pass under international ownership and control." The waterway, in its present condition of development, has never yet been used, Mr. Robb states, to one-half of its capacity. "It is a national asset, and a safeguard of Canadian commercial independence. Now it is proposed that we shall throw it on the scrap heap and, in partnership with the United States, spend three times what it cost, and probably a great deal more, in constructing a new international waterway over the same route. Though nine-tenths of it lies in our own country, we are to admit the United States to joint ownership and control."

Do these considerations appeal at all to the Canadian Government and, if they do, what does the Prime Minister mean by his declaration of willingness to negotiate with the United States?

GOETHALS OPPOSES WATERWAY PROJECT FROM GREAT LAKES

(By Associated Press.)

St. Paul, Minn., Jan. 31.—General George W. Goethals, who completed the Panama canal, declared in an interview here to-day that the proposed St. Lawrence-Great Lakes tidewater project "was impractical as a seaboard project."

The famous engineer, who was in St. Paul only a few minutes en route to the state of Washington, remarking that he was "a New Yorker," insisted that "the idea that New York is opposed to the project for selfish motives is all bosh.

"Every new transportation system only helps every other transportation system, and if I believed the St. Lawrence plan practical, I should approve it," he continued.

"I have not seen the report on the project, however, although I have written for one. In the first place, the Great Lakes seaboard project is visionary, and I wonder if the power development project really is not behind it.

"There is not enough water to carry ocean going boats to the head of the Great Lakes, and the expense of deepening the lakes would be prohibitive, to say nothing of the river improvements.

"There is a difference between the boats that operate on the Great Lakes and the boats that go to the sea, and it will be impractical and prohibitive in expense to attempt to bring the ocean going steamers through the Great Lakes. The two kinds of transportation require different kinds of equipment."

"Some day the canalization of the St. Lawrence will materialize, but it will be brought about on the basis of power development and not primarily as a shipping proposition. This will be of benefit to both the United States and Canada, but it will be of great advantage to Canada on account of the coal question."

Letter by Jos. Ethier.

It is to be regretted that Premier King did not give a more downright answer to the deputation which a few days ago urged the government to enter into negotiations with the United States looking to formation of a treaty with regard to St. Lawrence river improvements.

Sir Wilfrid Laurier's government spent nearly a million dollars on surveys for a deep waterway via the Ottawa River to Georgian Bay. Later on a Commission was appointed by Sir Robert Borden to report on the economic aspects of the undertaking. So far as I am aware the results of these investigations were favorable, and action upon them is awaited by the people of Canada who have already given strong and numerous evidences of their approval of the project.

A deep waterway can be had by this route at less than half the cost of the St. Lawrence project. It will be more direct, shorter, cheaper, and entirely in Canadian territory, and free from international entanglements. It will do vastly more to develop the natural resources of the country than is possible by any improvement whatever of the St. Lawrence. And it is largely to the development of natural resources that we must look to wipe out the heavy burden of debt under which Canada now staggers.

Premier King might well have pointed out to the deputation that we have a great national waterway of our own to develop, that it has been approved by former governments, and that Sir Wilfrid Laurier declared it to be Canada's next great national work. He might have told them also that the first duty of the Canadian government was to carry out this strictly national undertaking, and that, until it was provided for, the time was and would continue to be inopportune for discussion of international schemes.

Jos. ETHIER,

The Gazette, Feb. 12, 23.

THE DEEP WATERWAY SCHEME

Montreal Gazette, Tuesday, March 7, 1922

The deepening of the St. Lawrence River to permit ocean vessels to reach the Great Lakes is in no sense an engineering problem; given the money, and engineers will provide a 25-foot or 30-foot channel from Montreal to Port Arthur. The problem is financial, economic and political. Can Canada bear the cost? Will results warrant the expenditure? Is it desirable to enter into partnership with the United States in joint ownership of the waterway? These are the questions to be considered and determined before the project is embarked upon, and not the aspirations of one or the apprehensions of another section of the country. The cost is a matter of guess work. Engineers have reported that a 25-foot waterway can be constructed for \$252,000,000, but this estimate does not cover the deepening of lake harbors, nor the channels of the Great Lakes, nor the connecting rivers, and it is needless to say that preliminary estimates are invariably outrun in the case of public works. Canada's share would not be less than \$150,000,000, and it might greatly exceed this figure. It is no light matter to add \$8,000,000 of interest charge to the annual expenditure of the Government.

What of the economic advantage? The project is primarily designed to cheapen the export of Northwest grain by avoiding the cost of elevating at Kingston and Montreal. That is the only saving to be made, a mere bagatelle. Practical steamship men do not consider the scheme commercially feasible, for the sufficient reason that an ocean vessel cannot compete successfully with an inland vessel. Lake vessels are now in operation having a carrying capacity of 14,000 tons, while ocean vessels of 23-foot draft would carry about 4,000 tons. Deep sea vessels cannot

compete with lake vessels on the inland waters. Lake vessels have three times the capacity of deep sea vessels of corresponding draft. The deep sea vessel has to be built more strongly, and it costs about three times as much per ton to construct the ocean ship. Ocean carriers, moreover, require larger and more expensive crews. The difference in cost arising from these causes would many times offset the cost of transferring cargo from lake to sea craft as at present. A lot of nonsense has been written and spoken about the saving in freight rates to be effected by deepening the waterway for the passage of ocean vessels, an economy of as much as 12 cents a bushel even being promised, in ignorance of the fact that the normal rate from Lake Superior ports to Liverpool does not exceed this figure. A deep waterway may bring larger lake boats to Montreal; it will not take ocean vessels to the lakes.

Enthusiasm has been described as that state of mind in which the imagination has got the better of the judgment; and skilful propaganda has worked the Middle Western States into enthusiasm over the project. Even President Harding has put the seal of his approval on it, but President Harding is of Ohio and reputed to possess much political sagacity in the getting of votes. Fortunately several hundred million dollars will not be thrown away in any such chimerical scheme. In a recent debate on the subject with the Governor of Kansas, the Governor of New York concluded his argument by suggesting a thorough investigation of the project by impartial experts, and added: "After all of the facts have been developed, if these facts indicate that this project is feasible, I pledge my support to it no matter what it costs." That is a fair and reasonable attitude. If a deep waterway is to the advantage of Canada, Montreal certainly will not stand in the way of its construction, but we must first be shown. Canada is spending much money now in the enlargement of the Welland Canal, and in the coming years, as financial circumstances permit, will continue the development of the St. Lawrence waterways to accommodate larger vessels and cheapen transportation; but when the work is finally finished the lake craft will still come down to meet the ocean craft at the point where inland vessels cease to navigate and ocean vessels begin.

The political aspect of the question we regard as supreme. Joint ownership and control of the St. Lawrence river is a mighty serious bargain to make with the United States, which in short order would inevitably become the dominant partner. These two following views are commended to the consideration of Canadians:

"For a hundred years the two nations have been in perfect accord and no thoughtful person would suggest that these cordial relations should ever be severed, but as a matter of prudence and good statesmanship, if a ship canal were ever to be built down the St. Lawrence river, and for nine-tenths of the distance from Lake Ontario to the Gulf of St. Lawrence wholly within Canadian territory and under the sovereign control of the Dominion of Canada, if not the British Empire, then there should be a cession of territory the entire length of the St. Lawrence river, five or ten miles back from the river, constituting a zone like the Panama Canal Zone dsecure by treaty with the republic Panama."—Report New York State of Commission.

"Under American control and with the power of the St. Lawrence made available, the area might become one of the most remarkable industrial districts in the world. Acquisition of it would give us jurisdiction of the river bank opposite Montreal, as well as for some distance east of there, and that city would lose some of its most flourishing suburbs on the southern shore."—St. Louis Globe-Democrat.

Comment would be superfluous.

DELEGATES VOICED CONDEMNATION OF WATERWAYS PLAN

Montreal Gazette, March 22, 1922

(By Canadian Press.)

Ottawa, March 21.—Urging the Georgian Bay Canal scheme instead of the proposed St. Lawrence River deep waterways a delegation representing the Montreal Board of Trade, the Shipping Federation, and members of the city councils of Montreal, Quebec, Hull and Aylmer, interviewed Hon. W. S. Fielding, acting Prime Minister, and Hon. W. R. Motherwell to-day. The delegation was introduced by Hon. W. G. Mitchell (St. Antoine), and H. M. Marler (St. Lawrence-St. George).

Colonel Gear, representing the Montreal Shipping Federation, said the St. Lawrence deep water project would do incalculable damage to Canadian shipping, and would result in delay in navigation through holding back the flow of the ice each spring. He instanced the cost as another objection, and intimated that the power development would benefit the United States more than Canada. He urged that the Government study the report of the Shipping Federation made to the International Waterways Commission.

Stanley Cook, Montreal Board of Trade, and C. H. Catelli, Chambre de Commerce of Montreal, supported Colonel Gear. They urged that the St. Lawrence River development would give the United States too great a right in Canada. It was not feasible to make lake ports accessible to ocean steamers. Mayor Samson, Quebec, declared the project was against the best financial and economic interests of the country. Mr. Prudhomme, treasurer, Montreal Chamber of Commerce, said the United States supported the scheme in order to secure more electric power.

Mr. Bertrand, president, Hull Chamber of Commerce, was always in favor of reciprocity, but drew the line, at having much in common with the United States. The Georgian Bay Canal, as an all-Canadian project, was far better. He would fight for a free Canada.

No Appropriation in 1922

Mr. Fielding regretted the absence of the prime minister. There would be no millions appropriated for the St. Lawrence River project this year. The Cabinet had not seriously considered the project as yet. There would be ample time for all bodies to present their arguments. If the United States wanted it, Canada, as a good neighbor, would have to consider it, but only with consideration for the best interests of the Dominion.

The delegates submitted the following resolution:

"Whereas the International Joint Commission has recommended that Canada enter into a treaty with the United States for joint carrying out of combined water power and navigation development of the St. Lawrence, on the basis of a report made to the commission by its board of engineers;

"And whereas Premier Taschereau has publicly voiced the strong feeling of Quebec against alienation of any Canadian rights in the province;

"This deputation heartily concurs in the statement of Premier Taschereau, and respectfully protests against any international agreement being entered upon, as proposed by the joint commission for the following among other reasons:

"(1)—The proposals involve sacrifice of national control of the St. Lawrence waterway as a navigation route.

"(2)—No sufficient data as to cost have been submitted on which such an international agreement could be safely based.

"(3)—There is no evidence to show that any economic gain would result to Canada in any way commensurate with the cost.

"(4)—The expenditure contemplated is therefore not warranted, especially in view of the present financial position of the country.

All-Canadian Route.

"The deputation would further urge that in case any expenditures are to be made upon waterways between the Great Lakes and the Atlantic, first consideration shall be given to the all-Canadian route via the Ottawa River to Georgian Bay, known as the Georgian Bay Canal, which is without engineering difficulty, and can, at half the cost of the St. Lawrence route, be improved so as to afford efficient deep water navigation, 300 miles shorter in distance than the St. Lawrence, and 30 hours in time—entirely within Canadian territory, capable of developing valuable natural resources in northern Ontario and Quebec, and altogether free from international entanglements."

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